

THE TECHNOLOGY REVIEW



RELATING TO THE MASSACHUSETTS
INSTITUTE OF TECHNOLOGY
JANUARY • • • • 1929

technology review

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this point the roadway over the
grades until it reaches a height of
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pick up the southern trail at
ing to the Norfolk-Portsmouth
concrete approach, crossing
bridges and continu
ed Churches

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H. E. LOBDELL, '17 Editor

J. R. KILLIAN, JR., '26 Managing Editor

J. D. CRAWFORD, '27 Assistant Managing Editor

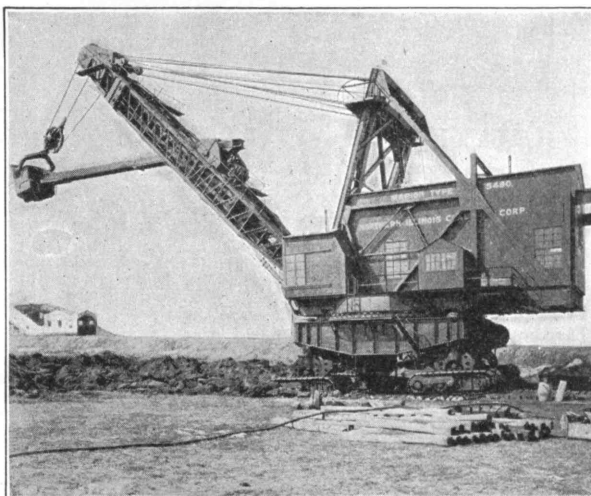
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THE TABULAR VIEW

THREE new names appear in this issue of *The Review*. HERVEY W. SHIMER's article on evolution with certain changes will appear in his book, "Evolution and Man," which will be published in February by Ginn and Company. Professor Shimer has been on the Institute staff since 1903 and has been Professor of Paleontology since 1922. He has received degrees from Lafayette College, Columbia University, and Gettysburg College. His article treats of observable evolution in geology, plant life, language, and all aspects of life. ❑ RICHARD H. FRAZIER, '23, is an instructor in the Department of Electrical Engineering at the Institute. His interest in Honors Study arises out of his work as a General Counselor for one of the Electrical Engineering Honors Groups. ❑ JAMES R. KILLIAN, JR., '26, whose article on the history of telescopes appears in this issue, is the Managing Editor of *The Review*. ❑ F. ALEXANDER MAGOUN, '18, is an instructor in the Department of Naval Architecture and Marine Engineering. His book, "The Frigate *Constitution* and Other Historic Ships," was published by the Marine Research Society of Salem in February, 1928. ❑ The *Review* has never before on its covers used the work of Jacques Carlu, Professor of Architectural Design at the Institute. This year the using of two of his etchings is planned for that space. "Verdun. La Porte Chaussee," the subject for this month, is one of his best. The Editors are indebted to Alexander Macomber, '07, for the loan of it.

PUBLICATION of this issue marks the Thirtieth Anniversary of *The Review*; for Volume I, Number 1, dated January, 1898, made its bow on December 20, 1897, as a quarterly magazine. In format it was of the so-called standard size (6½" x 9½"), printed on antique stock (real rag paper) with tipped-in half-tones and photo-gravures, all wrapped in a sombre brown cover — a style of apron which was to persist for nearly a quarter of a century. The current format, issued monthly, was adopted in 1922. ❑ To the Association of Class Secretaries (there was then no Alumni Council and the Alumni Association was scarcely more than a perfunctory factor in the Technology community) *The Review* owed its genesis. The Institute having gained its thirty-third birthday the growing need for a dignified journal to disseminate and interpret its news and spirit to a rapidly expanding body of Alumni and an interested general public was obvious. ❑ The Association of Class Secretaries, a virile, aggressive organization in 1899, not only recognized this need but appointed three men to formulate a plan: Arthur D. Little, '85; James P. Munroe, '82; and C. Frank Allen, '72. Mrs. William Barton Rogers advanced them \$1,000 as a guarantee fund, they appointed Arthur T. Hopkins, '97, as Editor, and *The Review* became an actuality. ❑ After three numbers, Mr. Hopkins resigned; Walter Humphreys, '97, was Editor of one number (October, 1899) and with the beginning of Volume II, James Phinney Munroe, '82, assumed control. For eight years Mr. Munroe labored until in 1908 he



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WM. P. LYLE, *Manager*

THE TABULAR VIEW

(Continued from page 141)

transferred the responsibility to Isaac White Litchfield, '85, who served for nine years, until 1917 when Robert E. Rogers became the fifth Editor. The present Editor succeeded Professor Rogers in 1922, and also at that time Eric F. Hodgins, '22, became Managing Editor until 1927 when he was succeeded by the present incumbent.

SO THE Review came into being and now is able to survey in retrospect three decades during which it has done its utmost to maintain and enhance the Massachusetts Institute of Technology and all for which it stands. Within its thirty bound volumes are recorded the events which have marked the progress of that institution since the "turn of the century" and the significant deeds of Presidents and professors, benefactors, Alumni and Corporation members, friends (and enemies, for every cause has some) whose personalities have been factors in that progress. ¶ Assuredly it is not immodest for The Review at this time to claim with pride that it has had some constructive influence, however slight, upon the policies by which in thirty years the Institute of 1899 has become the Institute of 1929 with a student body two and one-half times larger and current endowment of more than twenty-nine millions. Moreover, The Review with even greater pride may generously be pardoned if, on this anniversary, it rejoices even more fervently in feeling that its successive numbers have served to help maintain undiminished from 1899 to the present the sturdy characteristics of truth and hard work upon which the Institute's reputation was predicted and maintained under adversity. Added riches and added enrollment would not denote true progress of Technology if they had involved the compromise of her ideals. To this creed The Review has subscribed and will continue to subscribe, its editors hope, for many another thirty years.

THE Review has received a letter from a North Carolinian requesting that it recommend some magazine which surveys the fields of science and engineering. The inquirer has for many years been a reader of the *Scientific American* and he is now desirous of subscribing to one or two other periodicals that will help in keeping him well informed. ¶ It was nearly impossible to make any recommendations, for The Review knows of few magazines published professionally and not directed toward some trade that elude the Scylla of forbidding erudition or else that are not lost in the Charybdis of sensationalism. The *Scientific Monthly* is an admirable magazine for scientists, but one that is heavy for the layman. Most of the others are at the other extreme; they have sacrificed scientific integrity for catchcalls and wanton wiles. In the main they are sound and fury, not to be depended upon. ¶ There is a real need for some professional magazine that will present, authoritatively and yet understandably, information about events and progress in science and engineering.



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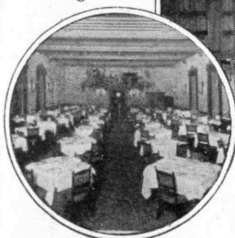
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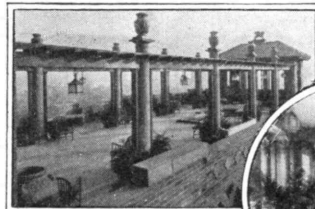
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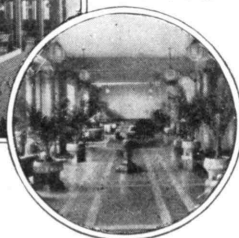
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The TECHNOLOGY REVIEW

VOLUME 31

JANUARY, 1929

NUMBER 3

EVOLUTION EVERYWHERE

A paleontologist views it as constant change

BY HERVEY W. SHIMER

CONTINUAL change is the essential characteristic of life. It is obvious that the individual animals and plants that we see today are in some slight way different from what they were yesterday and what they will be tomorrow. In a similar way the vision of the paleontologist, which covers vast eras of the past history of the earth, notes that a gradual change has taken place in the larger units of life, the groups of organism that constitute species and genera. Through the long periods of time wherein we may trace back the record of life, there may be discerned constant change of living forms into subsequent forms, each differing but slightly from its immediate predecessor. This is evolution, the change of one form into a different form under a sequence of cause and effect.

Soil is being constantly changed from solid rock through a complicated series of chemical and mechanical reactions; that is, soil is being constantly evolved. Under the increasing competition of modern times, a detailed knowledge of these evolutionary changes is becoming more and more essential to successful work in agriculture.

In my garden is planted the Cortland apple, formed in the New York Agricultural Station at Geneva in 1898 by hand fertilizing flower buds of the Ben Davis with pollen from McIntosh blossoms. The result was a combination of the hardiness of the former and the flavor of the latter.

Here, too, grow the Concord grapes developed by Ephraim Bull from the wild Fox grape, probably through natural crossing with the Catawba, in 1849; the cabbage, brussels sprouts and cauliflower, all produced by selection from natural changes in the wild cabbage growing on the sea cliffs of the shores of Europe, and the maize, potato and tomato developed through selection by the Mayas and Incas from wild American stock.

What is true of these garden products is also true of nearly all other food plants cultivated by man. Man has either consciously united different forms, or, more usually, has selected from natural changes the forms most suited to his needs, but in all cases the result was a change into a different form under a sequence of cause and effect. When Luther Burbank wished to produce a spineless cactus he selected the least spiny plants of successive generations until he had a spineless one. The ancient Mayas of Central America by a similar process of selection produced the large edible tubers of the potato, the enlarged roots of the cassava, the large grains and ears of maize.

What is true of plants is true likewise of animals. Man has gradually been changing his domestic animals into forms better suited to his desires, from the earliest records to the present. The American-bred Boston terrier is the result of a cross between the English bull dog and the English terrier and the later



HERVEY W. SHIMER, PROFESSOR OF PALEONTOLOGY AT THE INSTITUTE. THE ACCOMPANYING ARTICLE IS THE SUBSTANCE OF A CHAPTER IN AN IMPENDING BOOK BY HIM, TREATING SOME NEW ASPECTS OF THE THEORY OF EVOLUTION

elimination of those individuals possessing pronounced characteristics of either ancestor from the litters of the interbred descendants.

The same kind of changes that man produces through his selection of minute variations takes place in nature, though much more slowly, for man keeps the plants or animals which show slight changes in the direction of his desires from crossing with the unchanged forms or with those changing in undesired directions. All through the plant and animal kingdoms we see the natural changes in form, such as man has taken advantage of in his selections. The shape of the scallop shell of the Atlantic shores of North America and Europe is gradually changing. Present day scallops are different from those eaten by the Indians of early New England, as is shown by their remains in the shell heaps that date from the close of the Glacial Period.

When the fossil shells and other animals and plants that were living at still more remote times are examined, they are found to differ still more widely from those of today. The farther back we go in time, the greater change we find in all organic remains. The camels and horses of the Pliocene differ more, those of the Miocene still more. Studying the fossils from the Cenozoic rocks of North America, we see that the horse and camel changed slowly during the passage of time. Beginning in the Eocene as forms about the size of a small dog, they gradually increased in size and in the reduction of toes (from four to one in the horse, from five to two in the camel) down to the Pleistocene. From its first occurrence in North Africa in the Eocene, the elephant similarly increased in size to the Pleistocene and developed tusks from his upper incisor teeth and a trunk from a short tapir-like snout.

All of man's inventions are examples of evolution, for each new device arises through small additions to and changes from an older form. The cause — the mind of man, stimulated by the need of the moment — acts on already existing forms, and gives rise to the effect, the invention of new forms.

In his language, man is subject to similar evolutionary laws. Through modifications of existing words and forms of speech, as well as by the addition of new elements and the dropping of old ones, the language gradually assumes a new form. That is, through a sequence of cause and effect, one language gradually changes into a different one.

The Teutonic Angles, Saxons, and Jutes conquered the Celts of England as these had conquered the pre-existing non-Aryan people. Since of these Teutons, the Angles produced the earliest literature, the name English was

given to the whole group even though later the West Saxon dialect became the official language of all the English people. This Old English adopted many words from the Latin, especially such as relate to the Church. On conversion of the English to Christianity, mainly through the influence of the Celtic monks and priests, they adopted the Latin alphabet in its Celtic form, adding some of their national Runic characters. Other words were introduced by the Roman armies.

The change in the Old English, brought about by the Norman Conquest of 1066, was so great that historians date Middle English from this time. The Norman Con-

quest added many French words and brought about a great modification in spelling and pronunciation. Even the words taken directly from the Latin of that time were given a French spelling and pronunciation. Gradually, among the numerous dialects of England the London one became dominant. Its dominion was further extended by the introduction of printing in 1477. Printing in turn led to the

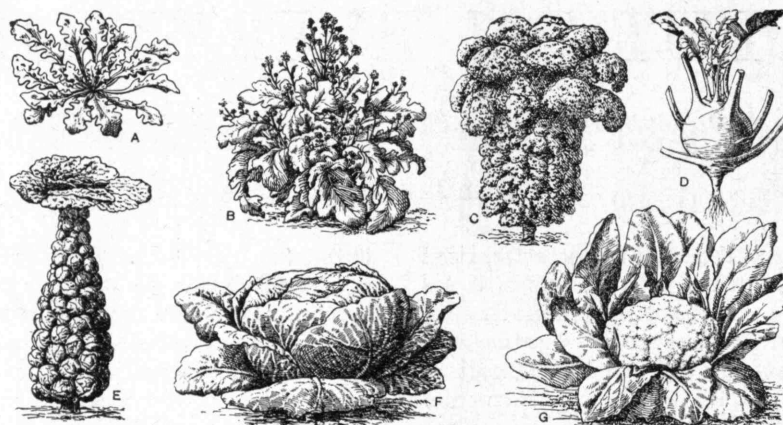
adoption of a fixed orthography. The development of manufacturing brought about an extension of commerce which led to the adoption of words from many languages, especially the French, Dutch, Italian, and Spanish, while the growth of science added many words of Greek and Latin origin. Our modern English, hence, emerges as a resultant of many causes, a true product of evolution.

Change is everywhere, at times faster, at others, slower. Never is there stability in either the inorganic or the organic realm. These changes, cyclic in the former group, progressive in the latter, are brought about by causes which in their origin are either within or without the object acted upon. Many of these causes are well known, others are as yet but imperfectly comprehended, but always does one form change into another form through a sequence of cause and effect. Solid rocks at the surface of the earth change into loose sand and clay, land areas are raised into mountains which are in turn gashed by canyons. The canyons widen into broad valleys until the mountains have disappeared.

The forms of plants and animals living today are changing at a slower or faster rate into different forms, and fossils show us that such change has been in progress since the inception of life upon earth. Man is subject to the same law. His skeleton, his implements and buildings, all he does or thinks, his very language, confess these evolutionary laws.

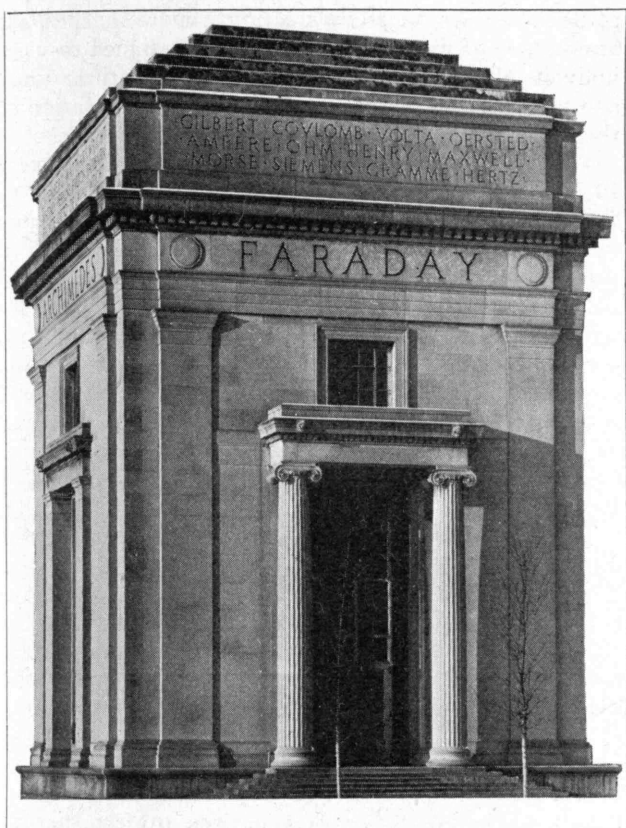
In all the observed universe it is true that

"A subtle chain of countless rings
The next unto the farthest brings."



EVOLUTIONARY CHANGES OR HORTICULTURAL DESCENDANTS OF THE WILD CABBAGE. A: THE WILD CLIFF CABBAGE; B: BROCCOLI; C: KALE; D: KOHLRABI; E: BRUSSELS SPROUTS; F: COMMON CABBAGE; G: CAULIFLOWER (FLOWER BUDS USED BY MAN)

From "Heredity and Evolution in Plants" by C. S. Gager. P. Blakiston's Son and Company.



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BY RICHARD H. FRAZIER, '23

resident at the college, to whose rooms the student goes for informal and individual instruction. It is the function of the tutor to advise the student what to read, what lectures to attend, and what experts to consult in the university; and to observe his progress. The student does not attend a large number of set exercises but studies mostly upon his own initiative, consulting with his tutor. Thus the amount of progress which an honors student may make during his period of residence is limited only by his own capability and energy. He is very much upon his own resources and responsibility.

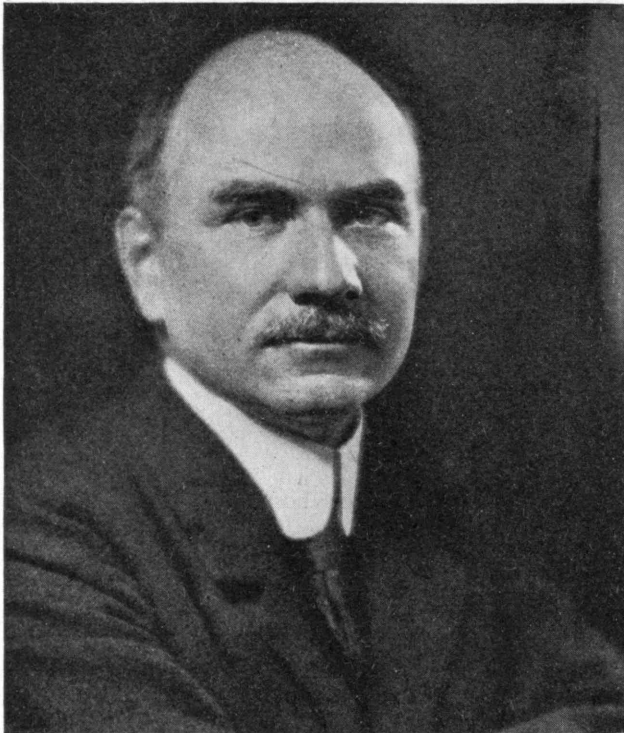
The chief interest of American educators in this English system of education is due to the fact that it has produced a notable portion of the great British statesmen and scientists. It is interesting to call to mind such statesmen as Pitt, Salisbury, Gladstone, and Balfour, and such scientists as Newton, Kelvin, Maxwell, and J. J. Thomson. But American educators who recognize the differences in tradition, temperament, and environment existing between the peoples of the two countries seek only the kernel which is vital to the success of the English system. This kernel is believed to be found in the sense of responsibility, self-reliance, and initiative which follows from giving appropriately chosen students ample opportunity to develop these qualities. Americans are apt to distrust processes which are old, because frequently the kernel decays with time and only the shell remains. Therefore American institutions guard against adopting a shell which may contain no kernel. Furthermore, even though the shell contain the kernel, the combination may be ill-suited to a new environment. If the vital principle of honors study is understood, experience will show what conditions should surround it to enable its successful cultivation in the various American soils.

In American colleges of liberal arts the plans for honors study differ so much in extent and character among institutions that the significance of honors study is not evident to casual observers. There is confusion with the "honor system" of unproctored examinations, or with the mere granting of honors for excellent grades in the usual class work, or for the accomplishment of some extra work in addition to minimum requirements. In fact, in a considerable majority of the over one hundred American colleges and universities which have so-called honors courses the conditions of study are of these latter two types, and hence are not such as to offer much new

IT HAS often been pointed out that the predominant system of education in this country tends to level to an average, that it is planned to meet the needs of the average student, and that the average student sets the pace. While there are a number of good reasons for the existence of this situation, it is a false notion of democracy which continues to maintain that all students ought to be put through the same educational process. Still retaining the processes designed to meet the requirements of the average, it has become desirable to make more adequate provision for students of exceptional ability.

The past decade has witnessed the beginnings of an effort in this country to bring this about by the establishment of honors courses of various sorts, particularly in colleges of liberal arts. Swarthmore under Frank Aydelotte, its President, has been a leader in this since 1922. There, too, the first honors course in engineering was established in their Division of Electrical Engineering under Lewis Fussell in 1924.

For many generations the older universities of England, Oxford and Cambridge have given especial attention to students of unusual brilliance. A student entering one of these universities must elect to become either a "pass" student or an "honors" student. A boy whose intellectual ambitions or qualifications are not high elects the former, and during his period of residence is expected to meet certain relatively simple requirements and to pass certain relatively simple examinations. But the more exceptionally gifted and ambitious boy elects to "read for honors" in a certain field of study, for which the requirements are more severe and the rewards correspondingly greater. As an honors student he is under the guidance of a college tutor or director of studies, perhaps



DUGALD C. JACKSON, HEAD OF THE DEPARTMENT OF ELECTRICAL ENGINEERING. THE ACCOMPANYING ARTICLE DESCRIBES THE HONORS COURSE UNDER HIS GUIDANCE

opportunity for the development of those qualities of mind cited as vital to the engineer and scientist.

In a paper presented at the annual meeting of the Society for the Promotion of Engineering Education last June, William E. Wickenden, director of the investigation of engineering education which is being conducted by the Society, stated that "reading for honors" lends itself better to a library than to a laboratory discipline. The interpretation need not be so narrow. If a plan for honors study in an engineering school has as a primary purpose the stimulation of resourcefulness, self-reliance, and initiative, it would seem that the opportunities for original and investigative work in laboratories ought to furnish one of the most valuable features of such a plan. The principle underlying honors study is believed to be a broad educational one applicable to all branches of engineering and science if sufficient study and effort are put into the development of suitable methods for encouragement and guidance. A plan for honors study is employed with success in the Department of Electrical Engineering at the Institute, as well as in the Division of Engineering at Swarthmore College. It is believed that a description of this plan may be of general interest.

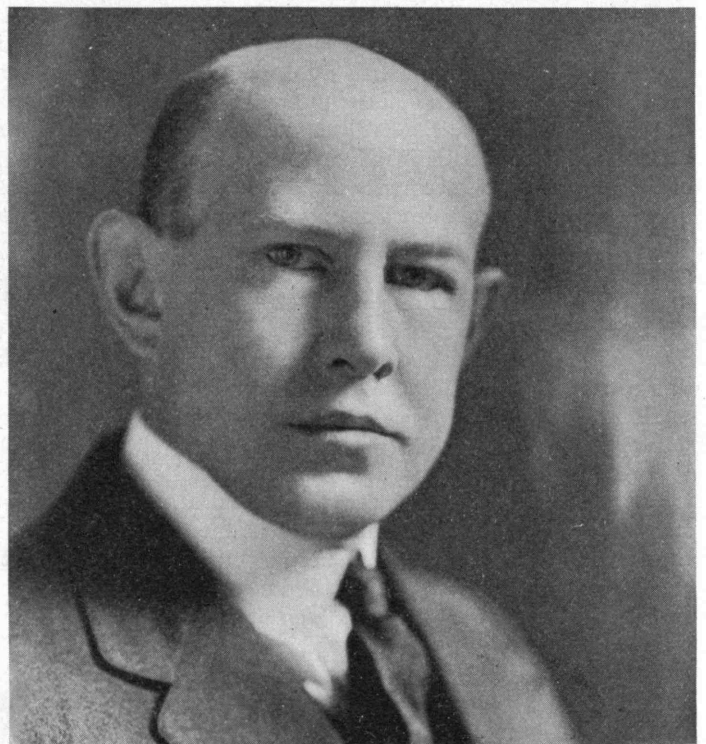
The plan for honors study developed in the Department of Electrical Engineering provides for the honors students the same requirements of scope of work, written tests, and examination as for all other students in the Department, but distinction is made in the conditions of study and methods of supervision. The aim is to instill a spirit of self-reliance, resourcefulness, and intellectual courage in students

of exceptional promise by creating a more independent atmosphere of work with a flexibility designed to meet individual needs. The plan was put in effect three years ago with consent of the Faculty, on recommendation of the Department's Corporation Visiting Committee.

The report of this committee for the academic year 1924-25 recommended that a greater effort be made to seek out the exceptional students and give them intensive training; that all students be asked, after the first half of their sophomore year, to decide whether they wish to compete for honors, and that the teaching staff cooperate with each student expressing such desire, in coming to a decision as to which line of work is best suited to his personality, character, and ability. Dependent upon the adoption of such a plan, certain fellowships were offered by Gerard Swope, '95, then chairman of the committee, in support of a year of graduate study in this country or abroad.

The first Honors Group in Electrical Engineering was established in the fall of 1925 for the Class of 1927. A new group has been formed from each subsequent class beginning with the junior year. Thus, since the formation of the second group, there have been two groups in existence simultaneously, one in the junior year, and one in the senior year. Applications for membership in the Honors Group of their class are received from the students during the second term of their sophomore year, and the members of the group are chosen toward the end of that term, largely on the basis of previous records in Mathematics, Physics, Chemistry, and Applied Mechanics, and their work in Electrical Engineering up until the time of

(Continued on page 182)



Bachrach

THE PRESIDENT OF SWARTHMORE, FRANK AYDELLOTTE, FORMER RHODES SCHOLAR AND FROM 1916 TO 1921 PROFESSOR OF ENGLISH AT THE INSTITUTE. UNDER HIS LEADERSHIP SWARTHMORE HAS PIONEERED IN EDUCATIONAL PROGRESS

TELESCOPES IN THE MAKING

Notes on some instruments and men notable in astronomy

BY JAMES R. KILLIAN, JR., '26

WHEN Galileo first looked at the heavens through a telescope in 1610, he used an instrument having a lens $2\frac{1}{4}$ inches in diameter. A lens of this size has a light-collecting area about eighty-one times that of the human eye, the pupil of which has a maximum opening, measured diametrically, of one-quarter of an inch. (*After Hale.*)

Announcements were published recently that plans were being made conjunctively by the California Institute of Technology and the Mt. Wilson Observatory for a huge new telescope, a gigantic artificial eye, which is to have a light-collecting area 640,000 times that of the crystalline lens in the human eye. This projected engine of astronomical research is to have four times the light-collecting area of the next greatest now in existence, the Hooker telescope on Mt. Wilson, with its great dish-shaped mirror 100 inches in diameter. Since its completion in 1920 this instrument has penetrated into unimaginable depths of space and brought within view many millions of stars hitherto unseen or unphotographed. What will the proposed one do with its 200-inch mirror?

The question about future possibilities might well remain rhetorical or be referred to those better equipped to speculate. A more pertinent and profitable subject is that of the genesis of such an instrument — its evolution from the crude lens of Galileo to a mirror nearly 8000 times larger.

The historians of science, for there are such souls, no doubt noted certain vagaries, born of haste, in this history as it has been related in the many articles stimulated by the recent announcement. It will do no harm to set the record straight, particularly the record of the discovery of "seeing at a distance." As a sample of a current error, the *New York Times Magazine* for November 25 reproduced the painting by Tito-Lessi of Milton's visit to Galileo and published beneath it the caption "... At the left Behind the Astronomer is the World's First Telescope."

Although a commonly held belief, this is erroneous. Galileo did not possess the world's first telescope, and, moreover, he did not first discover its principle. In a small work of his published in 1610, under the title "*Sidereus Nuncius*" he explained his part in the discovery: "Nearly ten months ago, it was reported that a certain Dutchman had made a perspective, through which many distant objects appeared as distinct as if they were near. Several experiments were reported of this wonderful

effect which some believed, and others denied; but, having had it confirmed to me a few days after, by a letter from Paris, I applied myself to consider the reason of it, and by what means I might contrive a like instrument, which I attained to soon after by the doctrine of refractions. And, first, I prepared a leaden tube, in whose extremities I fitted two spectacle glasses, both of them plain on one side, and on the other side, one of them spherically convex and the other concave. Then, applying my eye to the concave, I saw objects appear pretty large, and pretty near me; they appeared three times nearer and nine times larger in surface than to the naked eye. And soon after I made another which represented objects above sixty times larger; and at last, having spared neither labour nor expense, I made an instrument so excellent as to show things almost a thousand times larger and about thirty times nearer than

to the naked eye." (*Translated by Thomas Dick.*)

The Dutchman of whom Galileo wrote was a spectacle maker of Middelburg in Zeeland named Jan Lippershey (or Lipperhey). As the story goes an apprentice of his, while playing with spectacle lenses, noticed that by holding two of them in a certain position, a large and inverted view of objects was obtained. Lippershey, after being told of this, fixed two glasses in a tube, through which the weather-cock on a neighboring church appeared nearer and upside down. On October 2, 1608, the States General took under consideration a petition of his for a thirty-year patent on the device. For technical reasons they did not grant it, but recognized his claim.

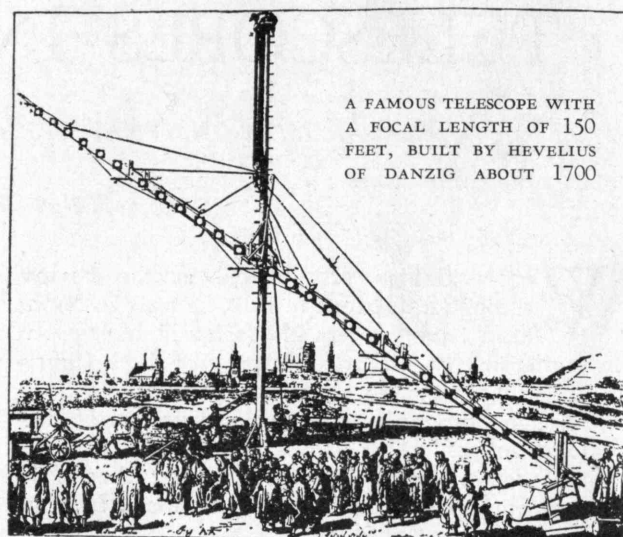


FRONTISPIECE FROM VOLUME I, "OPERE DI GALILEO GALILEI," THE WORKS OF GALILEO, PUBLISHED IN 1656 AT BOLOGNA. THIS RARE VOLUME IS IN THE TREASURE ROOM OF THE INSTITUTE'S LIBRARY

There were other claimants for priority, notably Zacharius Jansen, the probable inventor of the microscope, an instrument likewise often attributed to Galileo.

But this story of Lippershey and his apprentice is the accepted version of the discovery and Galileo's position is clear. Upon mere hearsay he evolved the principles of telescopic vision, independently invented the instrument, and made of it a serviceable astronomical tool. The fact that he did not hit upon it first should not detract from the honor which is his for having made with it such epochal discoveries. The story of Galileo is an epic of heroism and braininess: he used his telescopes to destroy forever the idea that the earth is the center of the Universe and to initiate the triumphant series of discoveries to which the projected telescope at the California Institute of Technology shall, if completed, undoubtedly add.

REPORTS issuing from California indicate that the new telescope will be a reflector, like the Mt. Wilson, and not a refractor such as Galileo constructed, as may be found at the Yerkes Observatory, and as is that innocuous tube on a tripod known to the laymen by virtue of his having paid ten cents to look through it at Venus. The reflecting or catoptric telescope utilizes a concave surface of suitable curvature and high polish to reflect and converge the image of a distant object. The refracting or dioptric type employs a lens to converge the image. The development of the reflector was the result of efforts to side-step chromatic aberration, an effect caused by the dispersion of white light into its component colors when passing through the lens of refractors. In 1758 a method of eliminating chromatic aberration from refractors was discovered, but reflectors have nevertheless become more generally used.



It is common to give Sir Isaac Newton entire credit for the invention of the reflector. A clipping at hand from that impeccable paper, the *Boston Evening Transcript* indulges in this half-truth and it is curious to note the same unqualified assertion in a recent book, "Modern Astronomy," by Hector Macpherson (Oxford University Press).

It is probable that the actual inventor was a famous Scottish mathematician, one James Gregory. In 1663 he published a treatise, *Optica Promota*, in which he described a perforated parabolic mirror with an elliptical mirror in front of it for turning the image back through the perforation to the eyepiece. Not until 1672 did Newton announce his design (See the figure on this

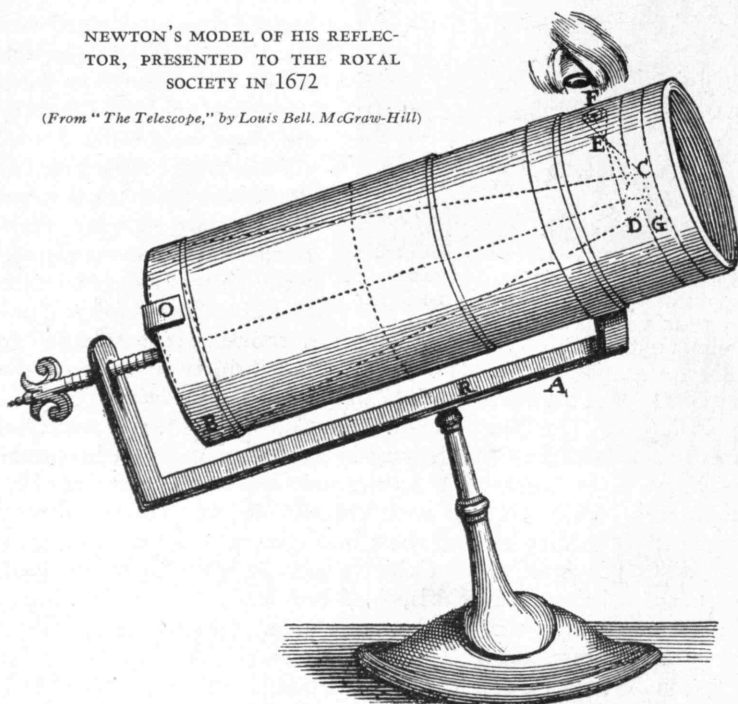
page). During the same year, working independently, the Frenchman Sieur Guillaume Cassegrain also designed a reflector.

None of these three ever developed successful instruments and not until fifty years later did John Hadley present to the Royal Academy the first successful catoptric telescope pictured on the opposite page. These facts are treated in some detail by Louis Bell in his book "The Telescope" (McGraw-Hill Book Company). According to Mr. Bell, "John Hadley should in fact be regarded as the real inventor of the reflector in quite the same sense that Mr. Edison has been held, *de jure* and *de facto*, the inventor of the incandescent electric lamp. Actually Hadley's case is the stronger of the two. . . . Moreover he took successfully the essential step at which Gregory and Newton had stumbled or turned back — parabolizing his speculum."

The gigantic figure of Newton cannot be diminished by taking from him sole credit for the reflector but justice can be done to these lesser luminaries who did well by their lights. Both the names of Galileo and Newton have been used as convenient pegs upon which to hang, correctly or incorrectly, events contemporary with them.

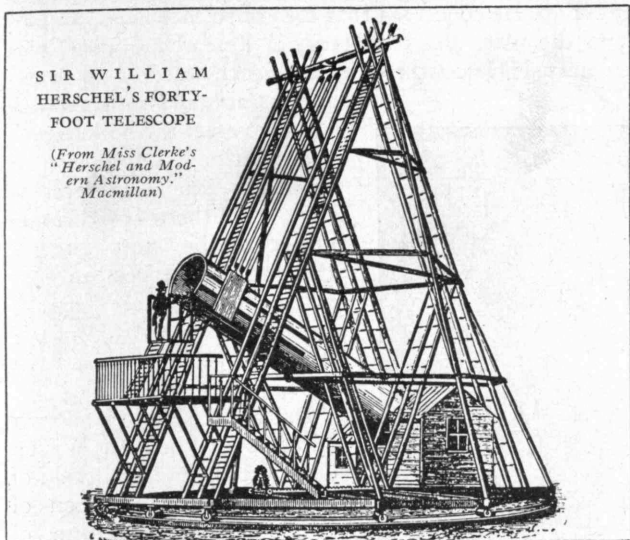
NEWTON'S MODEL OF HIS REFLECTOR, PRESENTED TO THE ROYAL SOCIETY IN 1672

(From "The Telescope," by Louis Bell, McGraw-Hill)



SIR WILLIAM
HERSCHEL'S FORTY-
FOOT TELESCOPE

(From Miss Clerke's
"Herschel and Mod-
ern Astronomy,"
Macmillan)



IN studying the lineage of our great telescopes of today another figure is encountered that looms majestically in the annals of science but remains almost unnoticed and unknown in bibliographical literature. Where on the library shelves may be found an adequate biography, particularly in the modern technique, of that prodigious observer and telescope-maker, Sir William Herschel? Who has presented him in his full stature or explained his progress from the piping son of a hautboy player in Hanover to the position of King's Astronomer in England? Here is a rich and unworked mine for some gifted Ludwig.

Herschel was born in 1738. The straitened situation of his family forced him, too, to become a musician in a military band, a position he soon deserted or resigned, according to the point of view. At any rate he fled to England to escape military service, only to experience there poverty and discouragement enough to down an ordinary man. But he had ability that could not long be hid under a bushel, and we find him in 1767 installed as organist of the Octagon Chapel at Bath, a prosperous, busy musician.

He had a lust for knowledge and a curiosity hardly equalled; consequently he took an avocation that allowed his curiosity unlimited range — astronomy. A good telescope being beyond his limited means he set himself down to make one with the result that he soon turned out a Newtonian type reflector with a focal length of six feet. It was his first, but what it brought within view stimulated his curiosity all the more, and he made larger and better ones. Soon the musician of Bath was beating at their own game the opticians of London. His telescope-making culminated with the celebrated forty-footer shown above. Premonitions of 200-inch reflectors!

But his telescopes were means to an end and he was primarily interested in the end. In the year 1781 he discovered Uranus.

"And so an unknown planet and an unknown astronomer swam into the ken of humanity." Subsequently the whole field of descriptive astronomy was enriched by his work: he pointed out the motion of the sun through space; the existence of revolving double stars moving in accordance with the Newtonian laws of gravity, and he observed for the first time some of the plethora of faint nebulae about which it is hoped the projected California instrument will yield more information.

Any biography of Sir William would be incomplete that did not contain the story of his sister Caroline and his son Sir John; they reflect much of his genius. She was his assistant in all his work; his son ably continued that work. It has been recorded that John made a vow with two school-fellows to make the world wiser. That was typical of all three Herschels. A remarkable trio!

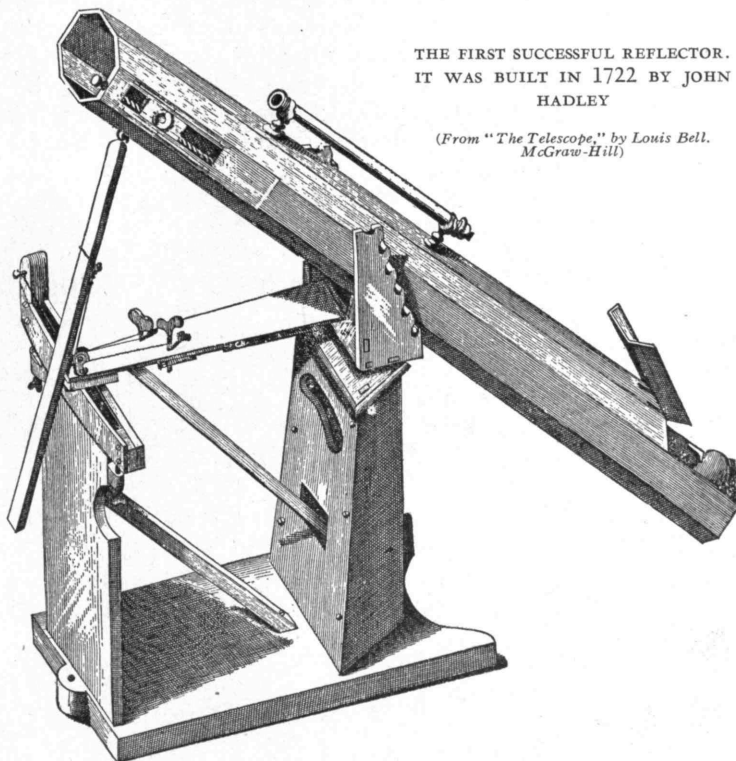
The Latin inscription on the tomb of Sir William justly claims that "he broke through the barriers of the skies" and he himself remarked before dying that he had "looked further into space than ever human being did before him." He died at the age of eighty-four, having been made a baronet and appointed the King's Astronomer.

These are the high lights in his career: nowhere has his meteoric rise been set down in a worthy manner that men might know him better and marvel.

THERE is not here opportunity to pass in review the multitude of other men and the many instruments that have contributed notably to the science of astronomy. The stories of any number of them are beguiling and worthy. There is, for instance, the Irish nobleman, the Earl of Rosse, who built the Parsonstown reflector with a sixty-inch mirror, twelve inches greater than

THE FIRST SUCCESSFUL REFLECTOR.
IT WAS BUILT IN 1722 BY JOHN
HADLEY

(From "The Telescope," by Louis Bell,
McGraw-Hill)



Herschel's. The man and his instrument made one of the capital discoveries of astronomy — the spiral nebulae that lie in the depths of space beyond the Milky Way.

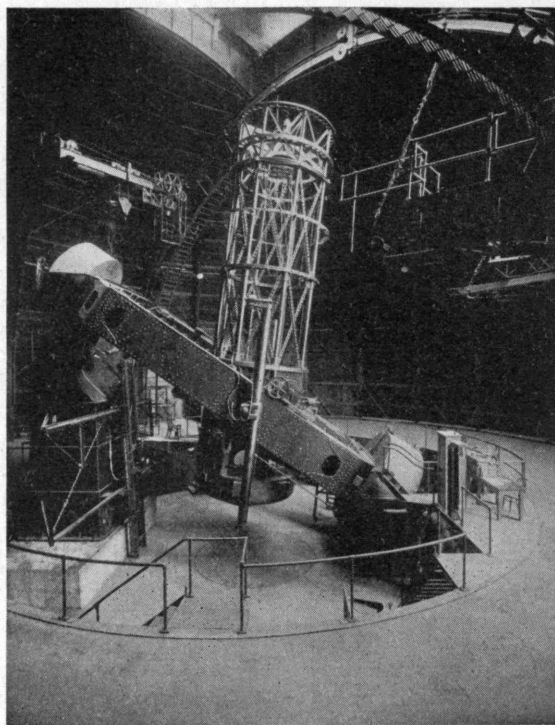
But what of our contemporaries, the men who are responsible for the great Hooker reflector and its many achievements, the projected 200-inch sister telescope and its vast possibilities? There is one who stands unmistakably in the forefront, George Ellery Hale, '90. His career got off to an early start with his invention of the spectroheliograph submitted in 1890 to the Faculty of the Institute in his Bachelor of Science thesis. We can present no better summary of his subsequent life and work than that given by his co-worker and fellow-astronomer, Charles G. Abbot, '94, in an article in *The Review* for February, 1927, entitled "A Life of Research." Said Dr. Abbot, "I have known Dr. Hale intimately since 1900, when we observed the total solar eclipse together at Wadesboro, North Carolina. He was a great man long before that, with the invention of the spectroheliograph, the founding of the *Astrophysical Journal*, and the creating of the Yerkes Observatory among his accomplishments in the field of astronomical research. . . . Not content to be absorbed in his own great observations, such as the discovery of magnetism in the sun, he conceived that men of different nations could unite to push the study of the sun, and out of his enthusiasm soon arose the International Union for Cooperation in Solar Research. . . . He conceived that the National Academy of Sciences should be something more influential than a small company of old men met to hold a privileged election and dine together, and he galvanized it with new blood. He conceived that Carnegie's millions ought to lay bare the secrets of the heavens, and the Mt. Wilson Observatory, one of the wonders of the world,

grew up. He conceived that men of science must unite to win the war, and the National Research Council was organized. He conceived that Science deserved an American palace, and millions were given to erect the building for the National Academy of Sciences. . . . He conceived that Southern California ought to be more than a paradise for retired millionaires, and that great center of research, the California Institute of Technology at Pasadena, sprang into being."

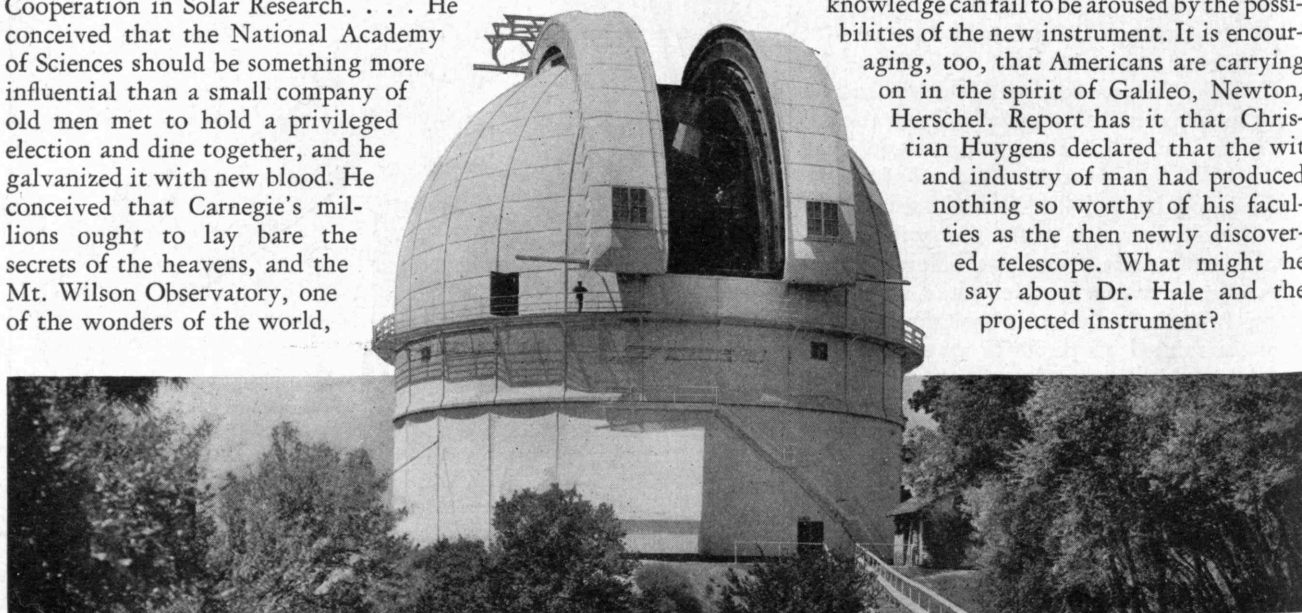
Dr. Hale is now Honorary Director of the Mt. Wilson Observatory and chairman of the Observatory Council of the California Institute of Technology. In discussing the mirror of the new telescope he recently threw interesting light on its probable construction: "We expect to make it out of fused quartz, and are much pleased by the cordial and generous offer of cooperation received from President Gerard Swope ['95] of the General Electric Company and Dr. Elihu Thomson [Non-Resident Professor of Applied Electricity], Director of the

Thomson Research Laboratory of this company at West Lynn, Mass. Dr. Thomson is deeply interested in the problem, and has already succeeded in making quartz discs of considerable size. His method is to cast a quartz disc full of fine bubbles and to fuse a layer of very pure quartz, free from bubbles, on the surface, in which to grind the proper dish-shaped figure. . . ."

No one concerned with expanding the boundaries of knowledge can fail to be aroused by the possibilities of the new instrument. It is encouraging, too, that Americans are carrying on in the spirit of Galileo, Newton, Herschel. Report has it that Christian Huygens declared that the wit and industry of man had produced nothing so worthy of his faculties as the then newly discovered telescope. What might he say about Dr. Hale and the projected instrument?



THE HOOKER REFLECTING TELESCOPE ON MT. WILSON.
BELOW: THE DOME IN WHICH IT IS HOUSED





Suum Cuique

AWARD of the 1927 Nobel Prizes for Chemistry to Professors Heinrich Wieland of the University of Munich and Adolph Windaus of the University of Göttingen for their investigations which resulted in the discovery of vitamin D, recalls earlier investigations in the same field and emphasizes the truth that few great triumphs of science have been due to individuals unaided by the patient investigations of others.

Cognizant of this, Professor Windaus has with commendable spirit acknowledged the importance of the pioneer investigations of Dr. Alfred Fabian Hess of New York University and the Bellevue Medical College, and of the great English scientist, Dr. Rosenheim, who worked in the same field of biochemistry. And there are others to whom credit is due.

Dr. John W. M. Bunker, Professor of Biochemistry and Physiology in the Institute's Department of Biology and Public Health, in talking recently to a representative of *The Review* pertinently commented on the award. Said he in part: "The award of a prize in art or science is usually for an achievement which intrigues the imagination by its spectacular nature. The case is not dissimilar to that in which a skillful halfback receives the ovation of the crowd for a spectacular touchdown, which achievement would have been impossible without the fundamental work of his linemen.

"It is to the credit, therefore, of the German recipients of the recent Nobel awards in chemistry that they have at once publicly acknowledged the dependence of the discoveries credited to them upon the fundamental work of British and American biochemists. It is an example of the generosity of truly scientific men whose goal is to approach the ultimate truth without particular attention to aggrandizement of personal reputations.

"Many workers have contributed to the logical steps in elimination which have inevitably led to the solution of the question of why vitamin D in cod liver oil has the same therapeutic effect on the children's disease, rickets, that is exerted by exposure of the child's skin to ultraviolet light from the sun or from suitable artificial sources.

"The discovery of this fact, of the identity of effect of

ultraviolet light and of preformed vitamin D in foods, is an American achievement. Without this fundamental discovery the later detail would not have been provisioned. The first development of vitamin D in foodstuffs through the photochemical effect of ultraviolet light came from the attempt of Steenbock in Wisconsin to explain an erroneous report that animal cages irradiated with this light conferred a curative effect on animals penned therein. He proved that the benefit came not from the irradiated air or walls of the cage but from irradiation of organic particles adhering to the cages *if they had not been thoroughly cleaned. . . .*

"The award of a Nobel Prize to an individual is like the presentation of a stand of colors to a commanding officer in recognition of the deeds of the many whom he represents."



Wide World

PROFESSOR HEINRICH WIELAND OF THE UNIVERSITY OF MUNICH. HE WON ONE OF THE NOBEL PRIZES IN CHEMISTRY

The Wages of Teaching

A RECENT study (*Occasional Papers*, Number 8) conducted by the General Education Board has revealed significant facts about salaries in American colleges, particularly for the year 1926-1927. In the 302 colleges of arts, literature, and science and corresponding colleges or departments of universities located in all parts of the country with which this study was concerned, the average salary of all grades of college teachers in all types of colleges was \$2,958. This figure

represented an increase of 29.8 per cent over 1919-1920.

To bring the facts nearer home, the average salary of all teachers, regardless of rank, in New England men's or coeducational institutions (women's colleges are lower) was \$3,605. The average at the Institute during the current year is \$3,540, or 2 per cent less than the above figure of 1926-1927 and 15 per cent more than the average in men's and coeducational institutions over the whole country.

In making comparisons with past years it should be kept in mind that these figures are, of course, based on nominal salaries. In what direction do they vary from real salaries? The Statistical Abstract of the United States, 1926, gives the index number of the cost of living in the United States, based on an average of 100 for 1913, as against 216.5 in June, 1920, and 175.6 in December, 1926. With this decrease in living cost, it is apparent that the salary increases are real increases over 1919-1920.

Comparison with pre-war conditions, however, is not



PHOTOGRAPHING RACING ANTELOPES FROM THE AIR. CHARLES J. BELDEN, '09, OF PITCHFORK, WYOMING, INITIATES A NEW AERIAL SPORT

so encouraging. Using the above index figures and comparing the average salary in all types of colleges in all parts of the country, the author of the report computed the following table:

	Nominal Average Salary	Real Average Salary
1914-1915.....	\$1,724	\$1,724
1919-1920.....	2,279	1,114
1926-1927.....	2,958	1,825

Says the report: "There was a distressing depreciation, it appears, in the real average salaries of college teachers from 1914-1915 to 1919-1920. The increase in 1926-1927 over 1919-1920 has been material and is gratifying. Nevertheless, despite all the efforts exerted in recent years to improve their economic status, teachers in the 302 institutions under consideration were only slightly better off financially in 1926-1927 than like workers in 1914-1915."

Deploring the low salaries paid in the teaching profession is nothing new. In "Galileo — His Life and Work," by J. J. Fahie (London: John Murray) there is interesting data on salaries and their attendant discontent in the teaching profession during the sixteenth and seventeenth centuries. Galileo accepted the Mathematical Professorship at Pisa on a salary of sixty *scudi* per annum, a *scudo* being equivalent to about ninety-seven cents. Later he had much difficulty in making ends meet at Padua where he first received 300 *florins*, or about \$150 per annum. He was forced into much trouble getting this increased, and, in fact, received no increase of notable size until his development of the telescope prompted an admiring Venetian Senate to give him his professorship for

life with a salary of 1,000 *florins*, or a little less than \$500 a year. Unfortunately, no index figures were computed in those days, so it is not possible to reduce these nominal figures to real ones. But they attest to the ever-present struggle for better economic conditions among academicians that is reflected in the study conducted by the General Education Board.

Transcontinental Post Road

ROAD construction in the United States, although it includes 73,120 miles built since 1916 at the time of the enactment of the Federal Aid Law, has hardly kept pace with the increased use of the automobile. The need for immediate relief from traffic congestion is apparent. One of the most carefully considered proposals for dealing with the situation would provide for the construction of a transcontinental post road and military highway with connecting arterial roads. Such a proposal is the bill introduced into the Senate last year by Coleman du Pont, '84, whose health prevents him longer from representing Delaware in the Senate and whose resignation from that body was accepted last month.

However, action may be taken by the Congress during the present session, for news comes that the Committee on Post Offices and Post Roads, of which Senator George H. Moses of New Hampshire is chairman, has acted favorably on the bill and recommended its passage.

Building roads is not a new interest of Mr. du Pont's. Readers of *The Review* may recall his gift to his own state of a 100-mile highway, completed in October, 1923, and described in *The Review* for November, 1924, in an article entitled "From Wilmington to Selbyville." Also, as might be expected of Mr. du Pont, his present idea is a far-sighted one as is strikingly demonstrated by the specification that the new coast to coast road shall avoid cities and towns, and be a four-way thoroughfare. Two center roadways would be for traffic proceeding faster than thirty miles per hour, and the outer tracks for vehicles moving below this speed.

The bill, known as "S. 1900," would create a national survey commission, consisting of the Secretaries of War, Agriculture, Treasury, Commerce, the Postmaster General, and six individuals qualified because of knowledge of highways, general engineering, and business experience, appointed by the President and confirmed by the Senate. This commission would be directed to make preliminary examinations and surveys for a central highway as direct as possible from the Atlantic to the Pacific coast and also to make further studies to determine the practicability of five other connecting roads: along the Atlantic seaboard, along the Pacific seaboard, along the southern boundary, one from about the center of the United States on the central highway northwest to connect with the Pacific seaboard highway in the State of Washington, and the fifth from the center of the United States on the central highway south to connect with the southern-boundary highway. In order that advantage may be taken of Mr. du Pont's experience with the Delaware turnpike which

was restricted to building on a thirty-foot roadbed and was compelled to go through Dover (which Delaware people now regret), specifications are made that the road avoid all municipalities with a population of over 2,500. It is to have a right of way of 500 feet; 100 feet to be used for the construction of a four-way traffic roadbed, and the remaining 200 feet on both sides, until needed for roadbed, to be leased. Ten per cent of the rentals are to be paid to the United States or proper political subdivisions thereof, in lieu of real estate taxes. The balance is for upkeep of the road and the ultimate payment of securities issued for the cost of construction.

The commission would be authorized to expend \$5,000,000 to carry out its work and required to make a preliminary report to Congress within two years. If its preliminary and final reports are acceptable, the commission is then to be converted into "The Federal Highway Corporation" to build the road or roads.

Aviation's Silver Anniversary

EACH successive year brings convincing evidence that aviation in all its aspects is a booming, expanding business in America. Particularly is this true of the past month which marked the silver anniversary of the flights made by Orville and Wilbur Wright above the lonely North Carolina sand dunes. The anniversary month saw the holding of the International Aeronautical Exposition in Chicago and the International Civil Aeronautics Conference in Washington, and, fittingly, the Annual Meeting of the A.S.M.E. gave a considerable amount of attention to airplanes.

Newspapers have recorded the incident at this conference in Washington wherein Orville Wright, the guest of honor, joined in honoring Charles A. Lindbergh. The ceremony well symbolized the extraordinary progress made in aviation between the time that Wright made his epochal flight and Lindbergh made his. At the opening session of the conference which continued for three



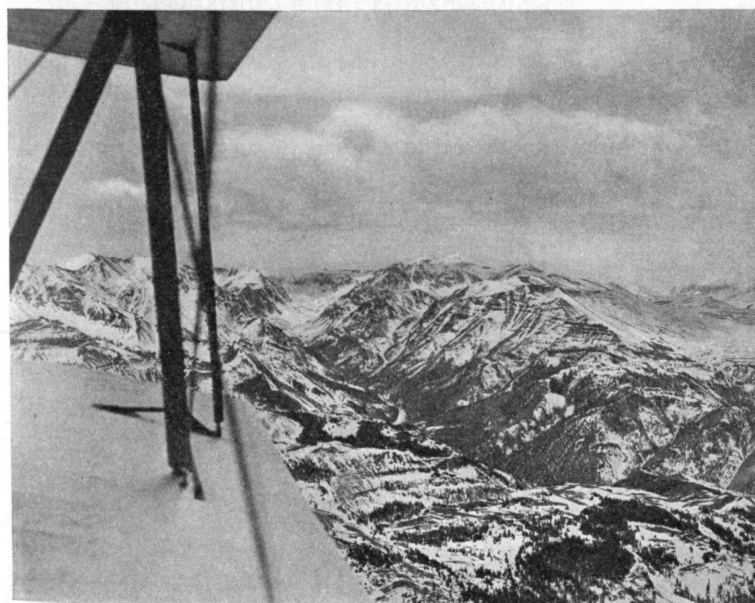
STATUARY BY DANIEL CHESTER FRENCH, '71, REPRESENTING SCIENCE CONTROLLING THE FORCES OF ELECTRICITY AND STEAM SOON TO BE REMOVED FROM THE OLD FEDERAL BUILDING IN BOSTON AND PRESERVED AS A MUSEUM PIECE

days, President Coolidge traced the first quarter century of the history of human flight, recalling that Tennyson's prophecy of eighty-six years ago, visioning the commerce of the heavens and "pilots of the purple twilight, dropping down with costly bales" had become a reality in the present commercial air lines.

The conference, called to discuss world aeronautical problems, brought together aeronautical leaders from forty nations. Technology was represented by Charles H. Chatfield, '14, Associate Professor of Aeronautics, who attended as a technical adviser. Commander Jerome C. Hunsaker, '12, Vice-President of the Goodyear-Zeppelin Corporation, who as a member of the staff at Technology was among the pioneers in aeronautical instruction in the United States, spoke on the need for accurate weather maps for trans-oceanic flights in an address on the opening day of the conference.

Speaking as head of Lufthansa, the largest airplane operating company in the world, Otto Merkel of Berlin predicted that the insistent and far-reaching demand for speed would bring early financial success to commercial air lines. The airplane, he said, could not expect to attract the majority of passengers but caters to those to whom speed is paramount. He added that expert opinion indicated that the pay-load of airplanes would soon be increased from twenty-five per cent to forty per cent.

Secretary of Commerce Whiting, chairman of the conference, drew attention to the



A STRIKING PHOTOGRAPH OF THE ROCKY MOUNTAINS AND YELLOWSTONE PARK MADE AT AN ALTITUDE OF 32,000 FEET. PHOTOGRAPH BY CHARLES J. BELDEN, '09

striking contrast wrought in twenty-five years, the duration record for flight having increased from twelve seconds to more than sixty-five hours.

The Chicago exposition which preceded this conference was supervised by Lester D. Gardner, '98, President of the Aeronautical Chamber of Commerce. Eighty-two planes were on exhibition and in addition to these there were innumerable accessories and mechanical devices. The exposition attested to the rapid progress that is being made in every aspect of aeronautical development.

The serious effort being made to improve the commercial airplane was indicated by the attention devoted to the subject at the Annual Meeting of the American Society of Mechanical Engineers in New York. Discussing "The Relation Between Commercial Airplane Design and Commercial Uses of Airplanes," Theodore P. Wright, '18, chief engineer of the Curtiss Aeroplane and Motor Company, Airplane Division, predicted that "Foolproof airplanes will soon make flying as safe any other form of travel." In his opinion accidents brought about by causes not directly attributable to faults in design will steadily decrease as airplanes more readily controlled are produced, and better schools for pilots are established. More complete knowledge of meteorological conditions and efficient radio distribution of weather forecasts will add to the safety of flying.

It is mete indeed that concomitantly with these evidences of great achievements in aeronautics, steps have been taken to settle the Wright-Langley controversy which of late has been a blot on the escutcheon of aviation. The Smithsonian Institution has issued a small pamphlet in which it states that too much has been claimed for Langley in the past and that it was unfortunate that the restoration of his machine was intrusted to Curtiss with whom the Wright interests were in litigation at that time over certain patents. It is specifically admitted that the label originally placed beside the Langley machine in the National Museum was a mistake. The Institution accordingly has changed the label on the Langley machine to read: "Langley Aerodrome. The Original Samuel Pierpont Langley Flying Machine of 1903, Restored. Deposited by The Smithsonian Institution." Credit for this praiseworthy admission and correction is in no small part due to the present Secretary of the Smithsonian, Dr. Charles G. Abbot, '94.

It should not be forgotten, however, that Langley was a pioneer American in the field of heavier-than-air flying and that Joseph S. Ames, Professor of Physics at Johns Hopkins University, and Rear Admiral D. W. Taylor, whom the Smithsonian Institution asked to investigate the subject, stated it as their belief that the Langley machine was capable of sustained flight had it been successfully launched.

French Statuary

DANIEL CHESTER FRENCH, '71, was not the famed sculptor of the statue of Abraham Lincoln in Washington, nor of the bronze doors of the Boston Public Library when he carved the figures of "Labor Supporting Domestic Life and Sustaining the Fine Arts" and of "Science Controlling the Forces of Steam and Electricity" which for half a century have surmounted the east façade

of the Federal Building in Boston's Post Office Square. Instead he had but recently spent the year 1867-68 as a freshman at the Institute taking chemistry under Professor Charles W. Eliot and solving problems in the calculus as prescribed by Professor John D. Runkle. Later he was to go abroad and spend some time in Florence studying under Thomas Ball.

Although his bronze "Minute Man" at Concord, Mass., was also a product of the pre-European period, these post office historical and allegorical statues do, it is said, represent a most important moment in American sculpture, namely French's work in stone in a phase yet untouched by European influences. But for nearly fifty years few have noticed or no one has thought much about these colossal carvings except office workers in the upper stories of office buildings on the east side of the square. Not many could have known they were by the sculptor whose "Statue of the Republic" graced the Chicago World's Fair or whose four groups representing Europe, Asia, Africa and America stand in front of the New York Custom House; the man who created in bronze the symbol of John Harvard revered at Harvard; and the bust of Francis A. Walker, the President "Preserver" of Technology.

With the razing of the Federal Building to make the site available for its successor (which, while it may be decorated by other less famous sculptors, will, it is promised, be so planned as to expedite the mails and permit postal clerks to work in the daylight instead of the twilight of many years standing) came the concurrent problem of finding a home for Mr. French's works. Being seventeen feet high and weighing several tons apiece, their disposition is no casual affair. Although one might be confident scores of museums would eagerly seek the work of French, no matter how cumbersome or weather-beaten, no such demand was evidenced.

Edward J. Holmes, '93, Director of the Boston Museum of Fine Arts, while pointing out that examples of the craft of a master like French "could not conceivably be relegated to the dump heap," did not wish to commit the Museum to taking them. He and his associates preferred to consider where they could house them before they would agree to accept the responsibility. One none too reverent modernist contemporary of Mr. French was of the opinion that "French, himself, would be the only bidder for these statuary at an auction, and he would bid simply because he'd like to buy them and hide them away as betraying evidences of his early immaturity." Nevertheless, a resting place for one has been found. Paul Joseph Sachs, acting director of the Fogg Art Museum at Harvard, not so indecisive as Mr. Holmes, has stated publicly that his "institution would be publicly honored to accept from the City of Boston either one of the post office sculptures, leaving one to Boston, itself, which should certainly wish to preserve an art object of such importance." And why, The Review is moved to ask, might not the Institute's Department of Architecture, which for some time will doubtless remain in the Rogers Building in Boston, lay suit for the other? Especially since Charles R. Gow, last June appointed first Professor of Humanics in the Institute's new like-named course, seems likely to become President Coolidge's appointee as Postmaster of Boston ere this January number of The Review is committed to the mails.



Distinguished Foreigners

EACH year the Institute brings in as special lecturers for its students and instructing staff, distinguished engineers and scientists from foreign universities and commercial organizations. One such visitor, Dr. William H. Hatfield of the Brown-Firth Research Laboratories at Sheffield, England, appeared early in November under the auspices of the Department of Mining and Metallurgy. In his three lectures he discussed the applications of science to the iron and steel industries as well as some of his own organization's work with cast iron and with rust- and acid-resisting steels. Definite arrangements have also been completed for bringing three lecturers from Germany. On February 6, Dr. Reinhold Rüdenberg, chief engineer for the Siemens-Schuckert Works in Berlin and a professor in the Technische Hochschule at Charlottenberg, will begin a series of ten lectures on advanced problems in the behavior of electrical networks and machinery. In March lectures will be given by Dr. Werner Heisenberg, Professor of Theoretical Physics in the University of Leipzig; and from Dr. Theodor Rehbock, a professor in the Technische Hochschule at Karlsruhe and the director of its hydraulic laboratory. All of these men are internationally known for their own original work in their respective fields: Dr. Heisenberg for his contributions to the new theory of wave mechanics, Dr. Rehbock for his studies of river control and river flow problems.

Alumni Council: 136th Meeting

THE Alumni Council, at its 136th Meeting held in the Walker Memorial on December 3, had placed before it two important items of business: it heard the report of the Alumni Dormitory Fund Committee, and it received from the Committee on Term Membership Selection a proposal for a new method of electing the nominees for Term Membership on the Corporation of the Institute.

Henry F. Bryant, '87, chairman of the Dormitory Fund Committee, reported that approximately \$530,000 had been raised in the two-year campaign. His report recommended that the books of the committee be closed on January 1 and that a letter be sent to all members of the Alumni Association appraising them of the action. This report was approved by the Executive Committee at its meeting that afternoon.



RICHARD A. HALE, '77, FOR FIFTY-ONE YEARS THE SECRETARY OF HIS CLASS, DIED AT HIS HOME IN LAWRENCE, MASS., ON DECEMBER 17. A BIOGRAPHICAL SKETCH APPEARED IN THE REVIEW FOR LAST FEBRUARY.

The report from the Committee on Term Membership Selection was read to the Council by the Acting Secretary-Treasurer of the Association on behalf of Mr. Bryant, chairman of the Committee. After first calling attention to the small percentage of Alumni who exercised their right to vote and to the ill feeling that had resulted from nominating nine men to fill three vacancies on the Corporation, the report recommended that the election be confined to an interested electorate which could operate without causing the public defeat of any candidate. It proposed that the balloting be in the hands of a representative Electoral College made up of the ten Representatives-at-Large and the Class Representatives on the Alumni Council, the present Nominating Committee to tabulate the vote in secret and approach the man who received the greatest number of votes. He will be asked to accept the nomination. If he does, the Committee declares him elected; if he refuses, the Committee goes to the next ranking candidate, proceeding in this manner until three nominees have been chosen. Nominations may be placed before the Electoral College by any member of the Association through any member of the Alumni Council. This is the essence of the proposed plan. A complete summary of the present and suggested plans has been circulated among the members of the Council and the secretaries of the Local Associations.

After a vigorous discussion the Council accepted the report of the Committee and authorized the appointment of Harold B. Richmond, '14, Henry E. Worcester, '97, and Edward B. Rowe, '06, as a committee to prepare the necessary changes in the by-laws of the Association.

Frank L. Locke, '86, personnel director of the Institute's Division of Industrial Cooperation and Research, described briefly the personnel problems confronting him.

Annual Dinner

BELIEVING that a later date would work out propitiously, the Committee on Assemblies of the Alumni Association has announced that the Alumni Dinner, usually held early in January, will not take place this year until the middle of February. Those Alumni, therefore, who have been grooming themselves in anticipatory fervor, will be assured by this announcement and, at the same time, adjured to remain patient. Notices will be mailed in due time to all who live within easy traveling distance of Boston.



BOOKS



Engineering • • Medicine • • Biography

A Great American Engineer

JOHN STEVENS, AN AMERICAN RECORD, by Archibald Douglas Turnbull. \$5.00. 529 pages. New York: *The Century Company*.

WE READ too little biography and too much fiction. A well-written biography offers all that the book of fiction does, namely diversion; and it offers much more besides: history in the making, human experience in the living, philosophy in the using.

Such a biography is "John Stevens, An American Record," for although it does become heavy if one attempts to swallow it in anything but homeopathic doses, the volume contains so much of early American life, letters, history, and struggle as to be a real contribution to the historical as well as to the biographical shelves. The years of patient effort: collecting, sorting, selecting, which must have gone into the preparation of a book containing either full text or extract after extract from literally hundreds of letters, have been well repaid by the result. I have seldom seen so carefully documented a volume.

Nor does the story deal only with John Stevens. His relatives, more particularly sons, who contributed to the success of various engineering projects begun by John, are given their full share of space. The book seems to be both inclusive and exhaustive.

An engineer, desirous of understanding the background of his profession, would do well to purchase this book and instead of glancing casually through it, reading here a bit, studying there a little, he would do well to spend a few definite moments a day for several months in giving it a careful reading. Here is the record of a man who fought in the Revolutionary War; took part in framing the Federal Constitution; made remarkable improvements in the design of steam boilers; designed a screw propeller; proposed and designed a vehicular tunnel under the Hudson which has a remarkable resemblance to the tunnel now actually in use; developed the first balanced rudder; had the vision to see the value of the railroad and the acumen to build one in spite of the obstacles of railroad pioneering; designed and built the first armor-clad which, though never finished, was the inspiration of the *Merrimac* and the basis of the *Monitor*; was the first to suggest the tee-shaped rail for railroads and put his suggestion into practice in the shape of these rails as we know them today; and who provided in his will for the founding of the Stevens Institute of Technology at Hoboken. During the inauguration, on November 24, of Harvey N. Davis as the third President of the S. I. T., tribute was paid to its pioneering founder, and a full-size working model of a locomotive built by Stevens was exhibited and operated.

In an age when speed in both transportation and communication have been realized as never before, we do

well to pause a moment to give recognition to this man who laid so many foundation stones for us. Little recognized though he is outside of our profession, John Stevens was one of the great founders of America. Accomplishments in statesmanship equal to those of his engineering genius would long since have been appreciated and acclaimed. It is time that he receive the plaudits he deserves, and Turnbull's book will do much to help accomplish this.

F. ALEXANDER MAGOUN, '18

Ars Medendi

A SHORT HISTORY OF MEDICINE, by Charles Singer. \$3.00. 362 pages. New York: *Oxford University Press*.

IN HIS magnificent biography of Sir William Osler (page 678, Vol. 2) Harvey Cushing records a comment made by a colleague of Osler in referring to a cheerful note written by the great teacher and physician as he lay dying at Oxford: "He was indeed one of the Saints of God — how beloved of men! We never think or talk of him without feeling the thrill of encouragement that he spread about him." The history of medicine presents many figures heroic and beloved who spread the thrill of encouragement about them. Even in this short history of Dr. Singer's, primarily concerned with science rather than men, one glimpses and cannot fail to be inspired by a procession of great characters — Hippocrates, Vesalius, Harvey, Linacre, Hunter, Bichat, Laënnec, Sydenham, John Locke, Lister, Virchow, Pasteur, Koch, and so on. It is a goodly company that passes in review.

The philosophy of medicine seems to contribute an added majesty to its gifted and honest disciples, but at the same time it encourages the littleness that lurks in its quackish and dishonest practitioners; its ranks have always been diluted with witch doctors, charlatans, and chiropractors who have retarded the methods and spirit of science. This perhaps explains in part the slow development of medical science and the opposition it has always had to fight. Up to the sixteenth century, except for intelligent interludes during Greek, Alexandrian, and Arabic history, medicine was a despised handicraft; doctors were classed with carpenters and scavengers and viewed with suspicion. Even Pliny cast aspersions upon the Roman physicians (see his "Natural History," Book XXIX, Chapter 8).

The quacks have created distrust, but entrenched ignorance and reactionary religion have likewise handicapped the physicians who have been able in technique and noble in purpose. Human dissection was long taboo and was not generally practised until the first quarter of the fourteenth century; Dr. Logan Clendening in his recent book, "The Human Body" (Knopf), pictures the

(Continued on page 186)



The Grab Bag

BEFORE dipping into the Grab Bag we wish to call one thing to the attention of the Class Secretaries and their helpers, all those who send in notes. A good deal of confusion arises from time to time when firm names are incorrectly spelled in copy. For instance: *Curtiss* Airplane and Motor Company is often spelled *Curtis*. We do not always have the facilities for verifying these names; errors must, therefore, occur once in a while.

Archery has long been a favorite pastime of the Secretary of the Class of '68. His notes contain a detailed account of his progress in this sport during the summer. — Since no '82 Notes are scheduled for this issue, we take this means of correcting an error which appeared in Mr. Snow's contribution to the November Review. His office is in the Statler Building, Boston; his home is in Watertown. He prefers to have his office address used, and we are sorry if this mistake has caused any confusion. — In January the Secretary of '90 and his wife begin their annual trek from golf course to golf course.

South America is one of the subjects discussed in the '96 Notes. Baranquilla, Colombia, may be lacking in running water, but it boasts of having no Volstead Act. The description of this tropical country with its palm trees, dark-skinned natives, and Spanish señoritas, makes interesting reading. Another member of this Class, in pursuit of art-history, gives an account of his trip through Spain. Tourists come and tourists go, but we seldom hear this country described. For some reason it is off the beaten track, from the post card point of view. — Can it be that the outburst of thanksgiving which Dr. Rowe contributed to the '01 Notes for December was the forerunner of this calm and rational thesis on the value of a college education to the student, with especial reference to the value of the extra-curricular pursuits, all of which is written in the hope of arousing some

"gentle acrimony" among his classmates?

We have heard a lot about the new Ford, but none that we have seen behaves like one that belongs to a member of the Class of '05. This one is "a dear little new Ford that whinnies when it hears his step." And yet we have not heard of any agency using this as an advertising slogan. The opening of the new North Station in Boston is an event of '05 interest inasmuch as the architect belongs to that Class. — The attention of our readers is called to the '10 Class Note in this issue. With tender care we hoped to see this little Note nurtured until it grows into a whole column.

How do they arrange these '11 dinners so that they always have eleven men? Who stays away when twelve threaten to come, and who comes to fill in when the number falls short? It is quite obvious from the '11 Notes that this time it was Mr. Denison's turn to stay away, for his coming would have made twelve at the table. — The Assistant Secretary of '13 chooses to be called the Under Secretary. From his complaints concerning his duties we thought he meant Under-Dog Secretary, but he grew more joyous as his description of the '13 Reunion of last June gathered speed. It seems to have been a regular reunion, by which we mean, golf, a class election, and rain. Evidently as a Fifteen Year Reunion it was a good-time-was-had-by-all.

What do you do when your copy of The Review arrives? We have always suspected that you turn straight to your own Class Notes and read every word of them. Then you glance through the front of the magazine, stopping at anything that may catch your eye. That is what the Class of '19 Secretary confirms. He neglects to say, however, what happens if your secretary has contributed no notes. Do you throw the magazine across to the corner of the room where there is a pile of advertisements, circulars, and begging letters collecting, or do you read wistfully through

neighboring class notes hunting for a familiar name? This new Secretary for '19 knows his readers, and his régime should be a successful one.

Ethyl is the lady love of one member of the Class of '25. A little limited in our knowledge of such subjects, we can only vaguely recall that there are Ethyl and Methyl. Is Ethyl the dangerous one? We can't remember. — The Class of '26 was represented at the Olympic Games by one of its members who is a fencer. Joseph Levis was an important figure in this sport while he was at Technology. Now his fame grows till he came through to the finals in Holland last summer.

We don't often mention the Club Note section in these columns, but this issue has so much of interest in the Technology Club of New York notes, that we wish to call your attention to them. The Annual Auction Bridge Tournament, the Cowboy Pool tourney, the "modified whoopee" of the Hallowe'en party are written up to make the indoor sports, as carried on at 22 East 38th Street, seem to have been written up by Robert Benchley himself.

Instead of the customary "No notes" notice, we shall henceforth list in these columns the Secretaries who have failed us with notes for this issue. Arthur A. Blanchard, whose address is Room 4-160, M. I. T., Cambridge, lets the Class of '98 go unnoticed for the first time this year. The Secretary of '00, George E. Russell, Room 1-272, M. I. T., Cambridge, has not been heard from since the November issue; and Russell H. White at the Rand-Kardex Service Corporation, 118 Federal Street, Boston, has proffered nothing on behalf of the Class of '16 since the issue of last April. Notes from Eric F. Hodgins '22 at 8 Arlington Street, Boston, and from Robert E. Hendrie '23 of 12 Newton Street, Cambridge, have been among the missing since July, 1928. Which reminds us, that right here where no one can know about whom we are speaking, is the place for a remark from one secretary whose

other duties lead him to neglect his column in this magazine. For years the charm of his style had pleased an increasing band of readers; now his silence in these pages brings no comment from any one of them. "If they would only write and say they missed my notes," he whispered plaintively in confidence, "I might feel encouraged to go on."

Now for the birth rate. Eleven births are recorded, eight of which are boys. The Classes of '20 and '25

lead with three apiece, '27 has two, and '08, '19, and '26 have one apiece.

Deaths

Further mention of the following men, recently deceased, may be found in the notes of their respective classes:

JOSEPH H. CURTIS '68. No date given.

RICHARD DEVENS '88. Died Novem-

ber 3, 1928. Had recently become connected with the Link Belt Company of Chicago.

JOSEPH B. BAKER '90. Died September 14, 1928.

WILLIAM H. COLLINS '90. Died October 13, 1928. Was assistant manager of the Norwich plant of the United States Finishing Company.

CHARLES L. STEINROK '04. Died October 22, 1928.

ALFRED G. PLACE '08. Died on October 25, 1928.

'68 The Class of '68 has lost by death this year one of its members, Joseph H. Curtis. I have not data at this time to write an obituary notice, but I hope to do so in the near future. This thins the numbers of the Class of '68 who are still living down to five. They are Appleton, Revere, Richards, Safford, and Wheeler.

I spent my summer visiting friends and relatives, also going to Snug Harbor at North Belgrade, Maine, where I could be near Jim, who was at Camp Merryweather. On the visits to friends and relatives my game of archery that I enjoy so much has been the main feature. Unfortunately, at Dover at Ned Rollins's great gathering of Alumni, including men, wives, and daughters from Maine, New Hampshire, and Massachusetts, we had a rainy day and so could not shoot with bows and arrows, but the cups are there and ready to be bestowed on the winners next summer. — When the mining engineers met at Hutchinson's place, at South Duxbury, we had bows and arrows and the winner of that match was Rudolph Emmel '11, and the cup he won was a pewter cup modeled upon the old Paul Reveré cider mug. I had several archery contests with young cousins, and one at Camp Merryweather in which some of the camp boys took part. I also had several matches at Snug Harbor camps in which the campers took part and shot for prizes. Then, when Jim and I went to Randolph, N. H., we had an archery shoot in which the guests of the hotel took part. In this there were two prizes, one for the best boy shot and the other for the best girl shot. The last match was by the members of the Church of the Good Shepherd who had a holiday and picnic on October 12 at Cedar Hill, Waverley. At this, two prizes were given for the best boy and best girl. — ROBERT H. RICHARDS, *Secretary*, 32 Eliot Street, Jamaica Plain, Mass.

'84 Last time the Secretary called attention to the fact that a medal had been struck in honor of Ryder. Further information about this has been obtained as follows: "Mr. Ryder came to the Institute (Drexel) when it was opened as Director of Physical Education of the Men. He has always been deeply interested in the Institute and the students, and, though he

has for many years been Dean of Men, he is also well known to the women students and is without question the best known member of our faculty, being remembered by every man and woman who ever attended our day college. It was natural, therefore, that when the engineering alumni voted last year to present a medal to a member of the Senior Class for 'service to the Institute,' that they should name it for Mr. Ryder in view of his service to the Institute, his interest and help in all student activities, and in honor of his sixty-fifth birthday in June."

— Tyler has leave of absence during the second term to inaugurate and get in smooth running order the principal office of the Association of University Professors in Washington. He has been for a number of years the Secretary and Editor of the *Proceedings*, which task has been executed as only he could do it.

The Secretary gave a talk before the Technology Club of Syracuse on October 29, upon "Recollections and Experiences of an Expert." Although it was a very stormy night, 150 turned out to hear him. — Sturgis has a son, Elliot T. Jr., in the present freshman class at Technology. — AUGUSTUS H. GILL, *Secretary*, Room 4-047, M. I. T., Cambridge, Mass.

'88 Richard Devens passed away on November 3 at his home, 1165 Fifth Avenue, New York. He is survived by a widow who was Helen VanKleck of New York previous to their marriage in 1908, and by two sons, Richard Devens, Jr., and Henry Fairbanks Devens, 2d. He also left a brother, Henry Fairbanks Devens of Pittsburgh, Penna., and a sister, Mrs. Nathan Clifford (Louise Devens) of Portland, Maine. He was born in Boston. At the Institute he took the course in mechanical engineering, which profession he followed during his entire career. After graduation he spent some time with several manufacturing companies. In 1898 he became connected with the Brown Hoisting and Conveying Machine Company of Cleveland, Ohio, and became the foreign representative of the company in London. Ten years later he became manager of the eastern office in New York, where he remained until recently, when he became associated with the Link Belt Company of Chicago. He

was an officer of the Brick Presbyterian Church, New York. Among the clubs of which he was a member are the Engineers, the University, Machinery, and the Englewood Golf Clubs. He was always interested in athletics. While at Technology he played fullback on the football team. Whenever possible he attended the reunions of our Class and was present at our recent one, celebrating the fortieth anniversary of graduation. He entered with zest into all the activities and appeared to be well.

The Secretary received from Sjöström, a volume entitled "Handbook of Napoleon Bonaparte" published by Dorrance and Company, Philadelphia. The preface states: "The life of Napoleon Bonaparte embraces such a multitude of persons, places, and events, that the reader of Napoleonic literature often experiences difficulty in properly placing and valuing many of the allusions made in such works." The pages contain a record of the principal events in the career of Napoleon Bonaparte, descriptions of his personal appearance, and a record of persons and places connected with his career. — The Secretary stated at the last meeting of the Class that the Institute Catalogue of 1884-85 shows 193 regular and 46 special students enrolled in the Class of 1888. Of these 77 were graduated in '88. The following year, of those who were graduated, 9 had been members of our Class. Most of these have continued their affiliations with it. Our first Decennial Record contained the names of 177 living members whose addresses were known. The latest Class Record, that of October 1, 1923, contained 170 names. A few years ago, the Institute's "Register of Former Students" for the first time included as members of our Class, a number of former students of the School of Mechanic Arts. The present list contains the names of 115 members whose addresses are known. — WILLIAM G. SNOW, *Secretary*, 38 Chauncy Street, Boston, Mass.

'90 Charles W. Sherman was Assistant Secretary of the "Engineers of Massachusetts" Association working for the election of Herbert Hoover. Many Technology men, including Dr. Stratton, were members. We also note that among the members was Leonard C. Wason of our Class. He

1890 Continued

is Vice-President of the Contractors National Organization of America. He was one of the committee for the convention held in Boston, November 22, and at the banquet held at the Elks Hotel he was the toastmaster. — Secretary of the Navy, Curtis D. Wilbur, on October 26 visited the Charlestown Navy Yard, and at noon Admiral Andrews gave him a luncheon. Among those present were Dr. Stratton and our classmate, Ernest H. Brownell, who is now located at the Charlestown Navy Yard.

We regret to announce the sudden death of our classmate, Joseph B. Baker. Joe passed away on September 14, 1928, at his home at Rockaway, N. J. — We also regret to report the death of another classmate. William Henry Collins, for many years assistant manager of the Norwich branch of the United States Finishing Company, died suddenly at his home in Norwich, Conn., on October 13, as the result of a shock. Collins's first business association was with the Silver Spring Bleacheries at Providence, as chemist and dyer. He transferred to Norwich about thirty years ago when the Providence concern was taken over by the United States Finishing Company. At Norwich he was placed in charge of the dye-house and was soon after promoted to assistant manager, the position which he held up to the time of his death. He was Treasurer of the Norwich Musical Association, Vice-President of the Round Table, a member of the Chamber of Commerce, a director of the Chelsea Savings Bank, and clerk in the Park Congregational Church. He is survived by his parents, his widow, two sons, William A. Collins '22, and Howarth C. Collins '20, a daughter, Elizabeth G. Collins, and a brother, John A. Collins '97.

Your Secretary and Mrs. Gilmore expect to leave for California about the middle of January, and will probably also go to Honolulu, returning home the latter part of April. During the absence of your Secretary, if you hear of any news of our classmates, kindly send it direct to The Technology Review. — Mr. and Mrs. John L. Batchelder have given up their Beacon Street residence, and are now living at the Ritz-Carlton Hotel. John's mail address, however, remains 834 Massachusetts Avenue, Boston, his business office. John's boy, who is a junior at Harvard, has left college to carry on his studies and work in painting for which he seems to have considerable talent. — GEORGE L. GILMORE, Secretary, 57 Hancock Street, Lexington, Mass.

'92 On October 29 for no particular reason and no special purpose, seventeen members of the Class gathered for dinner at the University Club, Boston. They were Atwood, Braman, Carlson, A. K. Church, Dean, Fairfield, French, Fuller, J. W. Hall, H. L. Johnson, Locke, Maynard, Morse, Newman, Nutter, Sargent, and Shepard. There was much pleasant general conversation and Johnson told us something

about the printing and publishing business and its need for technically trained men, and French had some interesting talk on the particular subject about which he is writing, the revolutionary period of American history. It was a very enjoyable evening and Nutter, who made the arrangements for the dinner, and your Secretary felt repaid for their efforts in getting this group together. — JOHN W. HALL, Secretary, 8 Hillside Street, Roxbury, Mass.

'94 "Frank P. McKibben, consulting and bridge engineer, has undertaken a lecture tour throughout the United States under the auspices of the General Electric Company on the application of electric arc welding to the noiseless construction of buildings. Lectures in some forty cities have been arranged. The opening lecture was in Rochester on October 4; the last lecture announced will be at Chapel Hill before the North Carolina Society of Engineers on March 4, 1929." McKibben was formerly a member of the staff of the Department of Civil Engineering, and later head of the Department of Civil Engineering at Lehigh, and more recently at Union College, Schenectady. He retired from teaching a few years ago to devote all of his time to consulting work, and makes his residence at Black Gap, Penna. — The Secretary has been hoping to hear from H. S. Reynolds, who sends an address as Middleboro, Mass., R. F. D. No. 3. Some months ago letters were sent to Reynolds at his New York office, and these brought the information that he was in South America on business. He was last reported to the Secretary as Vice-President of the Appalachian Power Company. If these words meet his eye, it is hoped that they will stimulate him to send in an account of his wanderings and investigations in the countries of our sister continent.

W. H. Bovey was in Boston for the meeting of the Corporation of which he is a Life Member. He has recently resigned as general superintendent of the Washburn-Crosby Milling Company after an active service of thirty years, and, while still interested in the company, he is devoting most of his time to projects of educational and philanthropic character, especially to the development of Dunwoody Institute of which he is chairman of the board of trustees. It is always a treat to have a call from William. He is chairman of the Corporation's Visiting Committee for the Department of Biology and Public Health, and while his visits are necessarily brief and rare, the keen insight he has shown and the sympathy with the work of the Department, both in its public health and industrial aspects has been very helpful. — Miss Louisa Wells sends 318 Memorial Drive, Cambridge, as her present address. — Frederick H. Burnham has also been located through the Chicago group of Alumni, and his address is now 732 Pine Street, Michigan City, Ind.

A memoir of Sturgis H. Thorndike was recently presented for the records of the

American Society of Civil Engineers by his partners, F. H. Fay '93 and C. M. Spofford '93. This memoir gives an account not only of his professional career, but of the varied interests which made Thorndike so widely known and respected. The following excerpts from this memoir will be read with interest by all his classmates: "In 1911 on the consolidation of the Engineering, Street, and Water Departments into the Department of Public Works, he became the designing engineer of the Bridges and Ferry Division of this, the largest of Boston's municipal departments. In this position he was in charge of the design of bridges and of other municipal structures. Among the more important Boston bridges with which Mr. Thorndike had engineering connection may be mentioned the Charlestown, Summer Street, Northern Avenue, Chelsea Street, Chelsea North, Meridian Street, Broadway, and Atlantic Avenue (or Cove Street) bridges, all over tidewater and each having an important draw span; the Cambridge Bridge (now known as the Longfellow Bridge) across the Charles between Boston and Cambridge, the most notable of the bridges of Greater Boston; and many important bridges on land, spanning railroad locations. On July 1, 1914 Mr. Thorndike joined with Frederic H. Fay, member of the A. S. C. E., former head of the Bridge and Ferry Division of the City of Boston, and with Charles M. Spofford, member of the A. S. C. E., the Head of the Department of Civil Engineering at Technology, in forming the engineering firm of Fay, Spofford, and Thorndike. In this organization he was an active partner until his death. Among the more important engineering projects under the direction of the firm in which Mr. Thorndike participated, may be mentioned the design and the engineering supervision of construction of the Boston Army Supply Base, one of the larger water-front terminals built during the World War for the use of the War Department; the Hampden County Memorial Bridge across the Connecticut River at Springfield, Mass., a monumental structure of reinforced concrete arches; and the water supply, sewage disposal, central heating plant, and other engineering features for the town of Mariemont, recently built in the suburbs of Cincinnati, Ohio. In all these projects and in many investigations and reports, both engineering and economic, Mr. Thorndike's contributions were valued by reason of his sound judgment and his highly analytical mind. He was long active in the work of the Northeastern Section of the Society, of which he was President at the time of his death. For thirty-two years he had been a member of the Boston Society of Civil Engineers, serving on many of its committees and also as a director in 1919 and 1920. He was a member of the American Water Works Association, the New England Water Works Association, and the American Society for Municipal Improvements. He frequently contributed papers to these professional societies. He was

an active member of the Boston Building Congress, the aim of which is to promote improved conditions in the building industry in Boston and in New England. The Protestant Episcopal Church and its affiliated interests, a vital part of his life equally with his professional work, claimed much of his time, effort, and energy. His interests extended to many enterprises for the betterment of humanity; he was a member of the Fellowship of Reconciliation and of the Church League of Industrial Democracy; he was a member of the New China Committee, and the Japan Committee; he was long active in the support of missionary work in the Protestant Episcopal Church; and he was a liberal contributor, not only to church activities, but also to many other good causes. For many years Mr. Thorndike made his summer home at Stony Farm, in Weston (and Lincoln), Mass., and during the latter part of his life, Weston was his legal residence. He was interested in the affairs of the town, but never held office until 1926 when he was elected a member of the Water Supply Investigating Committee. In 1927 he was elected a member of the Board of Water Commissioners. One of the chief characteristics was his love of nature; he was never more happy than when he was at Stony Farm. He knew and loved every tree on the place and every living creature was his companion and friend. Mr. Monadnock in southwestern New Hampshire frequently lured him to its slopes, and for many years he was a constant visitor at The Ark, at Jaffrey, at the base of this mountain. One of his pastimes in which he was often joined by his partner, Mr. Fay, was the surveying and the mapping of the many trails on the slopes of this beautiful isolated mountain. Mr. Thorndike remained a bachelor throughout his life. A loyal friend and delightful comrade, with qualities of sincerity, unselfishness, and earnestness rarely found, Sturgis Thorndike in his sixty years of life exerted a helpful influence among all with whom he came in contact, an influence far greater than he himself ever realized. — SAMUEL C. PRESCOTT, Secretary, Room 10-405, M. I. T., Cambridge, Mass.

'96 There was an indication that Class Notes for this issue would be rather scarce when fortuitously Charlie Lawrence came through with one of his characteristic newsy letters reporting items of interest from New York. It seems that about the middle of November Charlie was on jury duty in Brooklyn and it was his good fortune to run across Ruckgaber. He reports that Ruckgaber looks very well, although his hair is considerably tinged with white, showing the progress of years. He has the same old genial smile and amiable manner and apparently life has been very kind to him, and this is reflected in his present physical appearance and bearing. On Friday, November 16, while lunching with a friend at the Hotel Commodore, Lawrence recognized President

Stratton as he entered the dining room alone. Accepting Charlie's invitation to join them at lunch, President Stratton favored Lawrence and his friend with his company, and Charlie reports that the whole affair was very pleasant. It gave him an opportunity to learn at first hand a lot about the affairs of the Institute and to hear something of the Institute problems which Dr. Stratton has to solve. Lawrence reports that John Tilley has recently experienced a great loss in the death of the leading member of his firm, Otto Eidlitz, who perhaps stood out as one of the most conspicuous individuals in the building line in the United States. He was a man with unspotted reputation, whose work has always been of the highest character and who enjoyed the confidence and entire trust of all who in the remotest way were connected with the building industry. The business will go on unchanged, but Otto Eidlitz will be greatly missed. Steve Crane often lunches with Lawrence and, while the former's health has not been the best during recent years, he is taking good care of himself and not making any mistake by over-exercising, confining himself to nine holes of golf when golfing is good. One thing he accomplishes by this: he keeps his score well below the hundred mark and it also enables him to do other things that he is called upon to do.

A. P. Underhill, who has been handling Willys-Knight and Overland cars for a number of years, has now changed his job and is President of the Stone Operating Service, Inc., of Connecticut. This company handles the garaging and service of electric trucks and has one station in South Boston and one in Hartford, Conn. He began his new duties on October 1 when the Connecticut branch took over the plant and operations of the Electric Transportation Company in Hartford. This new job calls for frequent trips on Underhill's part between Hartford and South Boston, but he still retains his residence in Newton. — Lucius Tyler continues to sell windmills and pumps on Congress Street in Boston, but the erection of apartment houses in the Aberdeen section of Brookline made his residence so undesirable that he gave up his house and has moved to 631 Kenwood Avenue, Newton Centre, very near to Underhill. He had for some years owned a lot of land in Waban and had planned ultimately to build, but he finally gave up this idea. During the summer he has his family at Pocasset on Buzzards Bay, but Lucius is able to get down only over the week-ends and does not find it possible to indulge himself in sailing and fishing as much as he would like. Incidentally, he reports that he has a boy who expects to enter Technology two years hence.

Eddie Mansfield, who remains with the Edison Electric Illuminating Company of Boston, says that business is good and that while, theoretically, he is making electricity, actually he is in charge of the educational bureau of this company. He takes care of the cooperative course with Technology, and also oversees the work of about five hundred men who are en-

gaged in various lines of systematic study in the educational courses given by the company. As Eddie says, a man graduating from a technical school has just begun his education, and the Edison Company finds it much to their advantage to continue systematic education of these men. Personally, Eddie reports that his present job does not give him the opportunity to travel and meet as many of his classmates as in the past. He was even unable to attend the Harvard-Yale game at New Haven this year, although he sent his wife down to represent him.

An inquiry of Sam Wise brought forth the reply that he was still counting money at the Second National Bank in Boston and doing a little insurance business on the side, but in general the tenor of his life was very smooth and gentle. During the summer he made vacation trips by motor to the White Mountains and to Connecticut. He has reached the age where he has quit playing baseball and does not do much with tennis. At the same time, he does not feel that he has quite reached the golf age, although occasionally he will go out on the links. — The last word from Gene Laws was that, although he had several possible openings in management of smelting works, nothing had actually come to a head and he had gone to Salt Lake City, where his address was 919 First Avenue, in order to be in closer touch with actual operations. — As far as known, no one around Boston has yet seen anything of Henry Gardner since he came to take charge of the Comtor Company in Waltham. It is known, however, that he has taken up his residence at 18 Dean Road, Brookline, Mass.

Two items in a recent issue of *The Tech* indicated that '96 was doing its work in carrying on scientific education, all in addition to what Eddie Mansfield is doing, as previously noted. On November 23 N. H. Daniels spoke before the Student Branch of the American Institute of Electrical Engineers on the subject of opportunities for electrical graduates in the electrical industry. Naturally, Daniels from his connection with the Stone and Webster Company, dwelt upon the work done in the various departments of that company in the design, construction and operation of electrical power projects both steam and hydro-electric. On November 20 in the evening, H. C. Lythgoe spoke before the students of the Chemical Society at a smoker at Walker Memorial on the subject of food and drug control in Massachusetts. As director of the division of food and drugs of the Department of Public Health in Massachusetts, he cited a number of instances of violations of the Pure Food and Drugs Acts. He also made particular emphasis upon the necessity for scientific men to learn to talk the language of those to whom they are speaking, as for example, in court testimony.

A further report from Jim Melliush written at Barranquilla, Colombia, in October, says that instead of four months since he left the States it seems a year. Perhaps his story can be best appreciated

1896 Continued

if given in his own language as follows: "One has only to come to a primitive country like this in order to appreciate how wonderful little old U. S. A. is. I am staying at a bachelor's *pension* which offers a few more of the conveniences than one gets at the so-called hotels here. I hunted all around for a place with running water in the room or apartment, but found none vacant in the few places boasting of this convenience. At the *pension* we get the best cooking to be had in the city, but any meal at the Copley-Plaza would be a royal banquet in comparison. However, a magnificent new reinforced concrete hotel is being erected in El Prado — a modern suburban subdivision — which should be completed around May 1 next. If I am still here at that date, I shall probably move to it. It is unnecessary for me to remind you that there is no Volstead Act here so that one has plenty of good wine and beer (the latter Colombian, German, and English brews), to wash one's meals down with, so 'we shall not complain.' My work is sufficiently heavy to make me forget some of the petty inconveniences. This tropical country is very interesting and because of a quasi-boom now extant, offers a fine opportunity for men who can speak Spanish and English well.

"I am writing this from the roof of our *pension*, a sort of roof garden, from which I have a view for miles up and down the Magdalena River, a beautiful stream as large as the Mississippi at New Orleans. On clear days we can see the majestic Sierra Nevada Mountains (15,000 feet), fifty miles to the eastward. From the Caribbean Sea (or the *Mar de las Antillas* as it is known here), only six miles distant, cool fresh breezes modify the sun's heat. Our day temperatures are around 91° and night, 80°. Everything is quite different from the States — palm, magnolia, and royal poinciana trees, black-skinned natives and olive-skinned Spanish señoritas are everywhere evident. In Colombia there are only two classes of women as judged by American standards — *very good* and *very bad*. The American automobile predominates and of those the product of the General Motors Company. Nash and Dodge seem to have some following, too. Streets are narrow, twenty to forty feet wide, with sidewalks three or four feet wide, except in El Prado, where standard street sections as found in the States prevail. My 'little' job is the design of a system of sewerage, both sanitary and storm, and pavements. No sewers exist and practically no pavements. There are not as many bugs and mosquitoes as I had anticipated; my rooms are fully screened. My office is located in a new ten-room house with a central patio in El Prado. From my desk I may view the Rio Magdalena, the Sierra Nevadas, and the ocean. I hope to have our designs, surveys, and estimates completed by February 1. How long I shall be here after that I cannot say, certainly to about May 1, and if we get into general construction of sewers and so on, it may extend my stay indefinitely. With very

best wishes and greetings to the '96 fellows." Incidentally, Jim enclosed a most unusual label on which the Secretary was able to decipher the words "Original Pilsner Bier." This apparently had originally been pasted on some sort of a container, but none of the contents of the container accompanied the label.

The best item is reserved for the last. It is a report from another member of the Class who has been doing some traveling and who is of a modest disposition which has kept him from telling us about himself in the past. Louis Freedman, who is located in New York City, has given the following account of his recent European trip: "It was largely a pleasure trip, for the purpose of indulging in some of my hobbies — one of which is art-history. We sailed on June 29, and landed first at Lisbon — a large city with very beautiful public monuments, and a cathedral that has a touch of the Orient and of Africa in its effect. From there we went to Cadiz, rich in souvenirs and in works of Murillo. At Gibraltar we left the ship in earnest, and started up into Spain, stopping first at Granada. What is most interesting is naturally the Alhambra, and the beautiful remnants make the destruction of what had been the heart of the group of buildings the more tragic. Something unusual in the city is the gypsy settlement, the *gitanos* living in holes burrowed into the side of the hill which is part of Granada. Like most of their tribe, they live by begging. In Sevilla we found preparations for the Ibero-American exposition to be held this year. The Alcazar (or palace of the king), the cathedral, the House of Pilate (so-called), and other monuments gave a hint of what the city must have been in Moorish times. It is picturesque today, in other ways, and full of souvenirs of the great epoch in Spanish life in the sixteenth and seventeenth centuries. Cordova was the next stopping point, principally for its mosque which was one of the largest in the world; but now is only a remnant, for into the middle of it has been built a church, leaving only a forest of columns standing. Madrid is a conventional city with a splendid museum. Naturally, in all these cities, the real life is seen only in the winter season.

"From here we traveled on into France and Italy, and, in spite of the heat, found many tourists. September found us in Paris, always a world center, and becoming filled with American comforts unknown a generation ago. A trip such as we took, offers little to tell that might entertain the Class, although the journey for us was delightful and most interesting throughout." — CHARLES E. LOCKE, Secretary, Room 8-109, M. I. T., Cambridge, Mass. JOHN A. ROCKWELL, Assistant Secretary, 24 Garden Street, Cambridge, Mass.

'99 By devious ways it has become known to your Secretary that Will Rogers Parker has recently become a member of the staff of James Houlihan, Inc., of Oakland,

Calif., a well known advertising agency. Parker goes to Houlihan, Inc., from the Erickson Company, New York, with which he was associated successfully for many years, and he will take to his new position the accumulated experience derived from his connection with the advertising and merchandising of such products as the Multigraph, Nairn Gold Seal Linoleum, United American Lines, Royal Mail, Dominion Atlantic Railway, Willard Storage Batteries, Timken-Detroit Axles, Timken Roller Bearings, Bass-Hueter Paints, California Redwood, and several food products. Parker at one time held an executive position with the H. K. McCann Company in San Francisco and is familiar with Pacific Coast conditions. He will make his headquarters in the Oakland office and will serve as an account executive and a member of the plan board. This piece of news did not come from Parker himself. He is, like many of his *compadres*, hiding his light under a bushel, but fortunately some one comes along every once in a while and pries off the bushels so the candles shine for the edification of the rest of the Class.

Reunion plans are gradually forming. Charlie Corbett is publicity manager, and he is already drawing on the sinking fund to advertise us to ourselves. He is promising us a better time than we had at our last one. He will have our blessing and our cooperation, but he will have to step on the gas for the files and correspondence show that we had one grand time at the Twenty-Fifth Reunion. Charlie's publicity will be supported and supplemented by committees in different sections of the country. Two of these committees have already been appointed, one in Boston and one in New York. Harold Graves is chairman of the Boston committee, and he will be assisted by Arthur Brown and Walter Whitney. E. H. Hammond is chairman of the New York committee, and Edwin A. Packard and Harry K. White will serve with him. Other chairmen will be appointed within a few weeks.

George R. Heckle is now living at the Technology Club of New York at 22 East 38th Street, New York.

One of the most interesting little booklets I have read in a long time is a brochure written by Alexander R. Holliday, of Indianapolis, Ind., describing the Egyptian collection of the John Herron Art Institute of Indianapolis. This collection was purchased by Holliday during a trip to Egypt early in 1928, and the information packed in the little brochure he has written is not only entertaining but vastly instructive as well. Only a student of a well beloved subject could have put so much in such small space. He finished thus: "The story of Egypt covers the longest period of any practically continuous civilization known to us. It is a story of development in government, economics, and religion. It had some influence on our Roman-Greek cultural heritage. It is full of dramatic features, great and able personalities, accomplishments in buildings

that are still wondrous, and is of absorbing interest to many students." — W. Malcolm Corse, *Secretary*, 810 18th Street, Washington, D. C. Arthur H. Brown, *Assistant Secretary*, 53 State Street, Boston, Mass.

'01 In spite of the anguished appeal which appeared in the November number of *The Review* I have had but little response to my inquiry concerning the lack of interest of the individual members in Technology affairs. A few men have written in, chiefly close personal friends who recognized that my request was a sincere one, but they are too few to warrant a statistical analysis and too diversified to indicate the trend of opinion. One by-product, however, which has been derived from this limited response is a question raised by one classmate in a very interesting analysis of the whole situation. This I should like to discuss briefly as it defines a position. Substantially he questions whether the affairs of the undergraduates should not be supported by them and not by outside aid and assistance. The question is a large one and there are certainly several points of view as to the correct answer. Personally, I do not feel that those activities which belong wholly to the undergraduates should, of necessity, depend solely on undergraduate support. If one attempts to evaluate the benefits deriving from a college education, both tangible and intangible evidences present themselves. Among the first group comes the college degree which really indicates that a given individual has performed a certain amount of required work under controlled conditions and has satisfied the qualified experts that a certain degree of mastery has been attained in a number of basic and fundamental fields of knowledge. I think that none of us today lay the same stress on a college degree that was voluntarily attributed to it thirty years ago. It does mean that a man has learned something of how to learn something, has acquired a knowledge of the alphabet, as one may say, and in some cases suspected that a pleasing permutation of letters may go to form words which in turn are associated with ideas. That a man may pass through college and receive his degree without attaining this modest goal, is again a thing which we all recognize. On the basis of probability, however, the average boy leaving college with his degree has probably a larger volume of information in his basic studies than would be the case with the four years spent elsewhere and elsewhere.

This gives no evidence, however, of the profits which he has derived from the intangible benefits which are intrinsic in the extra-curricular activities. Personally I regard these latter as among the more significant and broadly educative influences of the undergraduate days. In no small measure success in life depends on or is at least influenced by our human relationships. And by success I do not mean solely the size of an income tax return. The individual who is able to exist without influencing and being influenced by

his environment is a rare bird, if he exists at all, which frankly I doubt. The more points of pleasant contact, therefore, that the individual presents to those with whom he is associated, the broader and more solid the basis on which his own personal scheme of human relationship rests. It is certainly no detriment to a young man selling engines to know that Johann Sebastian Bach was a great composer and not the proprietor of a delicatessen store. His vocation may bring him in contact with some man of wealth who has just sent a large subscription to support some serious musical enterprise. His heart warms to the youth who has at least some vague glimmering of his meaning when he refers to his cultural interest. In a like manner every opportunity for the undergraduate to acquire information in fields outside of the classroom is an asset of great potential worth, and since it is not hampered by the conventional designation of work he is the more apt to absorb and assimilate its benefits.

In spite of the advocacy of the few recent protagonists whose laudable thrift begins where the penury and parsimony of less favored races end, the whole scheme of education in this country is altruistic and not commercial. The exaction of the last penny of cost of educational opportunity from him who enjoys the privilege excites in him the same warm loyalty and sentiment that he feels toward his tailor. The education of the group spells the progress of the group, and even more significantly of the groups of a later generation. A large part of our education is free and that is the tradition engendered by the practice of the past and the ideals of the future. This being so, it is as necessary that the broadly educative activities outside of the curriculum should receive as unreserved and generous a support as those which find their being in our classrooms and laboratories. Sterling worth will always be sterling worth, but it may be denied its opportunity of demonstrating its unalloyed character if obscured and concealed by an inhibiting lack of expression. A simple child of nature may be pure and laudable but he is more companionable if he has grasped the basic fact that there are amenities of existence. It was no chance word that spoke of our rude forefathers, and bad manners, lack of tact, and narrow intolerance have been dissolved by the genial influences of social evolution. All of which leads me to the conclusion that it is far more important to bring to the next generation the broadening, cultural influences intrinsic in their group relationship than to deny them on the grounds of a stultifying economy. As Anthony Hope once so happily said, "Economy is going without something that you want on the chance that some day you may want something which you never will want." Therefore, let us be extravagant, aiding, abetting, and furthering every single phase of the complex life of the younger generation which makes them more nearly the genial, tolerant citizens of the world which we all like to fancy ourselves to be.

This is perhaps no fit forum in which to cast down the gauntlet of controversy but if by any chance I can inspire a gentle acrimony in the breast of one of my clan it may take verbal form, and as he pillories me in refutation I may secure that which will pleasure some of you whom I serve.

Next month upon the doings of some of your little mates. — ALLAN W. ROWE, *Secretary*, 4 Newbury Street, Boston, Mass. V. F. HOLMES, *Assistant Secretary*, 250 Stuart Street, Boston, Mass.

'02 The Class Secretary must plead guilty to having committed a Major error. In the November issue of *The Review* we stated that Major Henry B. Barry had returned from his work with the Graves Registration Service in France. This information was correct except as to the party. Our '02 Major who has been in France on this work and has now returned is Major Henry L. Green, whose address is c/o Adjutant Generals Office, War Department, Washington, D. C. Major Barry's address is correct as given in the November Review as Room 2202 Munitions Building, Washington, D. C., where he has been for two years past. Barry is in the Quartermaster Corps and was not overseas during the War. For several years prior to being ordered to Washington he was stationed at Fort Bragg, N. C.

Nickerson is plant engineer for the Walter Baker Company, the well-known chocolate manufacturers at Milton. — Bill Bassett is now located, as far as business is concerned, in Boston, the New England Power Company with whom he has been for many years having removed their offices from Worcester to the Public Service Building, Broad Street, Boston. While eventually Bill expects to locate his home in one of the Boston suburbs, he is at present commuting from Worcester. — Williston writes on the letterhead of the Consolidated Ashcroft Hancock Company, Inc., Pershing Square Building, New York. This is a combine of the Hancock Inspirator Company (with whom Bill has been connected forever and ever) with the Ashcroft Manufacturing Company and six other companies. The letterhead states that Bill is Vice-President of the whole works. — Thomas and Anthony Blaisdell, two sons of our classmate Robert Van B. Blaisdell of Coeymans, N. Y., are students at Wentworth Institute, Boston. — On Sunday, November 18, which was generally observed as Laymen's Sunday by the Unitarian denomination, Hunter preached the laymen's sermon in the Old Church at Beverly, Mass. Greeley preached on Sunday, December 2, at Nashua, N. H., where they had picked a different date for the observance; and Hunter preached on Sunday, November 4, at the Channing Church, Newton, Mass., which also observed the event at a special date. — FREDERICK H. HUNTER, *Secretary*, Box 11, West Roxbury, Mass. BURTON G. PHILBRICK, *Assistant Secretary*, 246 Stuart Street, Boston, Mass.

'04 As these notes meet your eyes Merry Christmas is past but the happy New Year extends before you, and it is our earnest hope that this may be the most prosperous one which the members of this Class have ever enjoyed. Inasmuch as this year will mark the twenty-fifth anniversary of our graduation, it may well be that this wish may come true. Prosperity which we hope will descend on all members of the Class does not seem to percolate into the Class Notes for the first issue of this year as the said notes are very few and far between. — Charlie Haynes, long connected with the United States Rubber Company, has been transferred from his location in New Haven to Malden, Mass., where he is now the factory manager of the Boston Rubber Shoe Plant of the United States Rubber Company. We are all glad to have Charlie back in this vicinity once more after a long absence, but personally he probably would have been willing to remain in New Haven as he has recently completed a summer home not far from that city. But as Boston is just as desirable to be away from in the summer as New Haven, his new home will be just as useful. — Dr. Robert B. Sosman has resigned his position as physicist at the geophysical laboratory of the Carnegie Institution to join the staff of the newly organized research laboratory of the U. S. Steel Corporation, Kearny, N. J.

Professor Charles E. Locke '96 has furnished us with a clipping from the *Engineering and Mining Journal* of October 13, 1928, which states that Clem C. Carhart, consulting mining and metallurgical engineer of Salt Lake City, was conducting several classes a week in the Department of Mining and Metallurgy at the University of Utah. — Hubert Merryweather, who has been for some years located in Santiago, Cuba, has returned to the United States and is now located in Cleveland, Ohio. — Charlie Stebbins turned in an item regarding Reynolds M. Harding, who entered the Institute with the Class of 1904 but later changed over to a five-year course, receiving his diploma in 1905. Harding has spent most of his time since graduation with various firms in the public utility business and is now manager of the Columbus Electric Light and Power Company, and the South Georgia Power Company with headquarters at Columbus, Ga. Although Harding is listed as an '05 man, there are doubtless many of our Class who will remember him and be interested in this note regarding his progress. — From the Alumni Office comes a notice of the death of another classmate, Charles L. Steinrok, who died on October 22, 1928, at Pittsburgh, Penna.

Professor E. A. Holbrook, who is Dean of the School of Engineering and Mines at the University of Pittsburgh, is sufficiently improved in health to return to work.

As we said at the beginning of the class notes, they are rather few for this issue but still the hope burns in our breasts that sooner or later we shall re-

ceive a copious supply from members of the Class. We trust that all our readers will note how we have gone over to the use of the editorial form rather than writing in the third person. If any one has any objection to this change, notify us at our office. — HENRY W. STEVENS, *Secretary*, 12 Garrison Street, Chestnut Hill, Mass. AMASA M. HOLCOMBE, *Assistant Secretary*, 3305 18th Street N. W., Washington, D. C.

'05 According to the *Convention Daily* of the American Electric Railway Association, Cleveland, Ohio, September 27, 1928, "Timidity does not enter into the make-up of Jim Barnes, the new President. If this were not true, he must surely have quailed before the task which he assumed back in 1920 in Louisville, and to which he was introduced with the statement by his predecessor that 'my heart goes out to any man who must take the responsibility of the management of a street railway.' This was about the time that things were lowest in the electric railway industry and the lowest of the low in Louisville. Some time before that, Mr. Minary, who had directed the company for thirty years, retired to become chairman of the board. The property was then placed in the hands of a committee of three of the directors, and they picked for the task of running the railway this man the electric railway industry knows as 'a typical all-business' New Yorker, talking just enough to be affable, bald except for a slight fringe of hair beginning to show touches of gray, somewhat heavy as to chin and jaw, but tempered by a warmth of personality and a sensitiveness to emotion, evidenced by a love of music. And so Jim Barnes went to work. He has put the railway back on a dividend paying basis, has coordinated the bus and the street car, has secured a modified operating grant, has sponsored the 'Cardinal Flyers,' captured the Brady Safety Award, served as President of the C. E. R. A. and also as President of the Kentucky Utility Association. These, of course, are just a few of the things that he has done. Aside from them he has been a real factor in the business life of the city. He is a member of all the prominent clubs, a bank director, and a director of the Louisville Industrial Foundation, the so-called million dollar factory-getting enterprise of Louisville, founded to aid in bringing industries to the city. There isn't a Boy Scout in Louisville who doesn't know Jim Barnes. For two years he attended Syracuse University as a special student in music. It was here that the analytical bent of the man asserted itself, and he switched from music to engineering, entering the Massachusetts Institute of Technology in 1901 and being graduated in June, 1905, with the degree of Bachelor of Science in Electrical Engineering.

"Mr. Barnes got his technical experience where experience counts most. Shortly after leaving college he became chief draftsman in the engineering department of the Oneida Railway, Oneida, N. Y., then engaged in installing the

third-rail system on the West Shore Railroad between Syracuse and Utica, N. Y. Later he became assistant engineer of that company. In February, 1912, he became chief engineer of the Syracuse Rapid Transit Company, the Oneida Railway and the Utica and Mohawk Valley Railway, now operated as part of the New York State Railways. Early in 1913 he became general manager of the Syracuse and Suburban Railroad. He was then only thirty-two years old and was heralded at that time across New York State as the youngest general manager in the state. From that post it was only a step to the general managership of the Buffalo, Lockport and Rochester Railway, with headquarters at Rochester, N. Y., and on April 1, 1917, he took on the more responsible position of general manager of the Schenectady Railway. It was from the post at Schenectady that he went to Louisville. Meanwhile, he has served as President of the New York Electric Railway Association in 1917 so that he has also had a well-rounded career in association experience. Overlooking Cherokee Park, which is one of the finest natural park formations in the country, Jim Barnes has built himself a home in which it is a real treat to fraternize with this man, versatile alike in his appreciation of the good things of science, art, music, and literature to which he finds time to devote himself despite his many business and civic activities." — Meanwhile the Class Boy continues his music and art at Harvard.

According to Mrs. Adams, "Dan is still with Lockwood Greene Engineers, Inc., manager of the Chicago office. He has a daughter in Wellesley and one at the University of Michigan High School and a dear little new Ford that whinnies when it hears his step, so he says." Mrs. Dan says that her letter is "not exactly for publication," but evidently she had a little sympathy for a poor secretary and did when Dan didn't. Come on, girls. — Grafton Perkins' older boy is due to enter Annapolis in 1930 if an appointment can be landed by Perk who is still urging the American people to buy Lifebuoy. — Somebody has told us that Doc Lewis's boy is at Bowdoin. Just when Doc had gotten Standard Oil all fixed up with the cheapest methods of making gasoline from crude oil, they announce that they are going to make it from coal, and Doc has to start in all over again. — Claude Anderson writes that "In September I took my daughter, Frances, to Boston, where she entered the Simmons College Secretarial Course and, because of her letters home, it seems almost like going back to the Institute again." Andy has been with the Ilg Electric Ventilating Company for fourteen years as manager of their Philadelphia office and seems happy.

One fellow actually wrote in and said that he liked the class notes for which he is entitled to the sincere thanks of the administration. — The Hygrade Lamp Company — Ed Poor, President — is doing more things than we recorded last month. They have been conducting a

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radio tube business in Beverly, Mass., under the name of the Neutron Corporation, with a daily capacity of 1,000 tubes. Where do they all go? Our single tube has lasted five years. — Your Secretary was an interested observer of the M. I. T. soccer team's playing Wesleyan to a tie on November 3. Our boys made an excellent impression, much better than that of the Beavers who played baseball here last spring. — Leonard Cronkhite, President of the Association of American Rhodes Scholars, recently announced that the Rhodes Trustees were promoting a bill in the British Parliament to revise the method of selecting the scholars from the United States.

Nat Richards, Vice-President of Purdy and Henderson Company, New York, writes, "Having been connected with the same business since graduation, I seem to find few 'adventures' which would make interesting reading for *The Review*. At the same time I know that others, like myself, must like to hear occasionally from the rest. My two daughters are pretty well grown up now. One is at Miss Wheelock's School in Boston, and the other is a junior in the high school at Maplewood, N. J., our home. The engineering end of our business has been in my charge for a number of years now. We also conduct a general contracting business in the West Indies, and a mercantile business in the same section. I make occasional trips to that end of the line, but most of my activities center here. For some time now we have been engaged in erecting the new capitol building for the Republic of Cuba, a \$12,000,000 to \$15,000,000 job. It is built of native stone, and we installed a complete stone working plant there for the purpose — the first machinery of its kind in Cuba."

The new North Station, Boston, designed by George Funk, has been opened with elaborate ceremony. Apparently everybody was there but the architect. Indeed, the account in the Boston *Herald* did not even mention his name. But this is not uncommon. Evidently railroad officials, politicians, and sporting gentlemen make more news than the man who plans a structure that millions of people will look at for fifty or a hundred years. According to one editorial, the new station "is splendidly ample; convenient in every detail; beautiful without having any 'fussiness' in its adornment; with easy and comfortable access to trains, and a concourse of noble proportions, enclosed and heated." Can you imagine that of the Boston and Maine Station? Somewhere over the waiting room is an arena seating 18,000, larger even than the new Madison Square Garden. This was opened with a nice prize fight. If the next Jamboree is held there, here's hoping that the acoustics are better than Mechanic's Hall and that '05 is not placed at the back of the room. — ROSWELL DAVIS, *Secretary*, Wes. Station, Middletown, Conn. SIDNEY T. STRICKLAND, *Assistant Secretary*, 20 Newbury Street, Boston, Mass.

'06 The following was received under the date of October 24 from Jack Norton: "Just a line to let you know that I have changed my job from that of teacher to director of the Bureau of Laboratories in the Detroit Department of Health. Strange to say I do not miss attendance on classes and am very happy in my new work." — The Boston papers of November 27 included some items of interest to the Class. On January 1, 1929, the New England Telephone and Telegraph Company will be divided into two operating areas, the northern area consisting of Maine, New Hampshire, Vermont, and all of Massachusetts north and west of the Metropolitan area. The southern area will be made up of the present Metropolitan area and southeastern Massachusetts and Rhode Island. H. E. Darling, III, will be the general manager of the new southern area, while F. A. Benham, I, will be the engineer reporting to the general manager of the northern area. Darling was formerly general traffic manager of the company and Benham was an assistant engineer. — JAMES W. KIDDER, *Secretary*, 8 Harrison Avenue, Boston, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills, Mass.

'07 Since preparing the notes for the December Review we have heard directly from Jim Barker whose change of business we announced at that time, and we can amplify our statement regarding him by saying that he is assistant to the Senior Vice-President of Sears-Roebuck Company at Philadelphia. — John Kimball is one of several '07 men who are connected with the Stone and Webster organization in Boston. John has been an engineer with these people since 1912. His home address is 66 Perkins Street, Melrose Highlands, Mass. He has two sons. — The other Kimball of our Class, W. F., is also with Stone and Webster at 49 Federal Street, Boston, doing statistical work. The residence of W. F. and his wife and thirteen-year-old daughter is 61 Pearson Road, West Somerville, Mass. — Thirdly, for Stone and Webster in Boston, comes Edward G. Lee, who has been an engineer in their hydraulic division since May, 1926. Ed has been associated with various engineering firms and projects since graduation in 1907. With Mrs. Lee and his three daughters Ed lives in Greenwood, Mass., a suburb of Boston.

Harold A. Kingsbury, one of our few Course X men, followed chemical engineering for about a year and a half after graduation and then took up patent law, receiving the degrees of LL.B. and M.P.L. (master patent law) from National University Law School. He now is patent attorney with E. I. du Pont de Nemours and Company at Wilmington, Del. Harold is married, but has no children. — Like most of our architects, Walter Kirby has stuck to his profession since 1907, practicing in his own name, with office at 681 Fifth Avenue, New York, N. Y. From 1910 to 1911 he at-

tended the American Academy in Rome. Kirby is not married. — Ralph Knight, a graduate in Course VI, is an executive in the manufacturing department of the United Shoe Machinery Corporation at 205 Lincoln Street, Boston. His work is along experimental and confidential lines. With his wife and son and daughter he lives at 81 Lovett Street, Beverly, Mass. — BRYANT NICHOLS, *Secretary*, 2 Rowe Street, Auburndale, Mass. HAROLD S. WILSON, *Assistant Secretary*, Int. Shoe Company, Manchester, N. H.

'08 The first bi-monthly dinner of the 1928-29 season was held on Tuesday, November 13, at Walker Memorial. There was a very good turnout, the following being present: Sewall, Lang Coffin, Linc Mayo, Myron Davis, Medlicott, Heath, George Belcher, Tim Collins, Newhall, Booth, Merrill, Doc Leslie, Jimmie Burch, Toot Ellis, Carter, Wells, Kennison, Beede, Carey, and Cook. We were especially favored in having Jimmie Burch and Doc Leslie with us, as ordinarily Jimmie doesn't come East at this time of year. Doc Leslie hadn't as yet started for Florida, so was able to attend the dinner. We were interested to learn that he was a very active member of the Republican State Committee of Florida, and judging from the election results he must be a pretty good politician.

After dinner Jeff Beede showed moving pictures which he took at our Twentieth Reunion last summer and they certainly were a great success, especially when he repeated the films, running them slowly and stopping for stills whenever desired. Beede also showed some industrial films prepared for the General Electric which were intensely interesting. Gerrish and Wattles had previous engagements, so could not be at the dinner, Gerrish being in New York and Wattles reading a paper at the Refrigeration Dinner which was held at the Engineers Club on the same night.

Carl Bangs writes us that he is now living in New York, as he recently became head of the technical department of the American Chatillon Corporation whose large rayon manufacturing plant is located at Rome, Ga. — Win Ford writes that he is now located at the Veterans' Hospital, Rutland Heights, Mass. If any of the boys happen to be out that way we know he would appreciate very much if they would drop in and see him. — The following extract will be of interest: "J. T. Ellsworth, well-known metallurgist and superintendent of the Judge Smelter in Utah, when it was in operation, has been visiting mines and renewing acquaintances in the Park City vicinity. Mr. Ellsworth is now with the Colorado Zinc-Lead Company at Leadville, Colo."

The following extract from the Chicago *Journal* of recent date will also be of interest: "If Major George A. Quinlan, county superintendent of highways, does not take time off for a game of golf today he should, because golf is his favorite way of killing time and this is his forty-eighth birthday. He was born in Waco,

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Texas, and after graduating from Georgetown University and the Massachusetts Institute of Technology he hung out a sign as a civil engineer in Dallas, Texas, where he was married. He came to Chicago in 1910 as engineer for the Great Lakes Dredge and Dock Company and has been a county official since 1914 with the exception of the two years of the war when he was a major of engineers. He lives with his wife and three children at 211 Greenleaf Avenue, Wilmette."

Jeff Beede has another son and heir as David Chilton Beede was born on October 15. The young man weighed eight pounds and we expect he will be seen around Technology as a freshman member of the Class of 1950. — Leroy Hammond, division engineer with the Metropolitan District Water Supply Commission, was in Boston on November 21 reading a paper before the Boston Society of Civil Engineers on diamond drill borings for the Swift River Dam. — We are very sorry to announce the death on October 25 of Alfred G. Place at Youngstown, Ohio. Burial was from his former home in Woburn, Mass. — HAROLD L. CARTER, *Secretary*, 185 Franklin Street, Boston, Mass. LINCOLN MAYO, *Assistant Secretary*, 842 Commonwealth Avenue, Boston, Mass.

'09 There is very little news for the Class of '09 notes for the January issue of *The Review*. The President of our Class, Carl Gram, has returned to Boston where he is again associated with E. B. Badger and Sons Company at 75 Pitts Street. Carl had been with this firm previously, but was for a time with the Lancaster Iron Works at Lancaster, Penna.

Another member of the Class, Hugh Lofting, is again heard from. About this time of year he adds another to the series of books which are primarily for children, but read by grown-ups. This season's contribution is "Doctor Dolittle in the Moon." It is a continuation of the adventures of his now famous character, Doctor Dolittle, and all the tiny creatures that gather around him. — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. PAUL M. WISWALL, *Assistant Secretary*, c/o Postum Company, 250 Park Avenue, New York, N. Y.

'10 Gorton James, who is now chief of the Domestic Commerce Division of the United States Department of Commerce, spoke in Portland, Maine, on November 16, at the manufacturers' group meeting of the Fourth New England Conference. He told of the results of the industrial and marketing surveys of New England recently completed by his department. — DUDLEY CLAPP, *Secretary*, 16 Martin Street, Cambridge, Mass.

'11 Thanksgiving is just around the corner as these notes are being composed and so it is particularly timely that they should open with the chronicling of the genesis of a new family group: Mrs. Arthur T.

Price announces the marriage of her daughter, Minnie E., to Samuel Hoag Cornell on Saturday, October 27, 1928, in New Orleans. They will be at home at 2220 Short Street, New Orleans. All of the Eleveners join in wishing the Cornells health, happiness, and prosperity.

The significant Eleventh Day of the Eleventh Month this year fell on Sunday, so our annual celebration was moved ahead to Monday, November 12, at Walker Memorial. Situated as he is in Syracuse, N. Y., Ye Secretary found it impossible to be present. Let Jack Herlihy, Assistant Secretary, tell the story: The Class of 1911 celebrated the Eleventh Day of the Eleventh Month with a dinner at Walker Memorial on November 12. Appropriately there were eleven members present. Seated around the table were Bigelow, Bogdasarian, Herlihy, M. MacKenzie, MacPherson, C. S. Merrill, McManus, Parker, Stewart, Whitcomb, and Wilkes. The gang had so many interesting experiences to relate that there was no time for bowling. Whit brought along some movie reels that he shot on his recent trip to England and Merrill had some covering his trip to the West Indies. The Class voted that Hollywood had overlooked two first class cameramen. Dennie's absence was the only thing lacking to make this one of our best parties.

Ted Van Tassel, X, writes that he is now located at Norwich, Conn., where he has started the new Van Tassel Sole and Leather Corporation. His new address is Box 477, Norwich, Conn. — Fred Daniels, VI, sailed for Europe on a business trip on the first of November and expects to return by the middle of December. — Roy MacPherson, II, seems to spend much of his time commuting to California and Europe. He took the Mrs. to Europe, but we have no information concerning the Hollywood trips.

I recently received a fine letter from Stanley E. Bates, I, member of the editorial board of *The Tech* in our student days, in which he says in part: "As to my present activities, I am now in Chicago with an office at 6431 Harvard Avenue. Since I sold out my manufacturing business two years ago, I have not been engaged in any one regular occupation. In other words, I couldn't find any other business that suited either my inclinations or my pocketbook, and likewise couldn't find a job working for some one else that appealed to me. So you might say that I am among the ranks of the unemployed. Of course, if you look in the Chicago telephone directory, you will discover that I am in the bond business, but actually I spend more hours per week on advertising work than any other. I have a few small accounts, handled after the agency fashion, and if I don't succeed pretty soon in getting back into a manufacturing business, I may try to develop it still farther, into a real agency. Among other gainful occupations in which I am engaged I might mention bridge, and among sports for sport's sake, tennis, in which I have succeeded thus far in competing with the youngsters to retain a Chicago ranking,

though not a national one. Never popular with the ladies, as you will recall, I am still a bachelor — a gay club man, I guess, whatever that is. At least, I belong to a lot of clubs, though I don't get gay very often, for the quality of present-day gayety (in bottled form) doesn't appeal to me at all. I have teetotaled for lo these many years. Continuing my literary activities of Columbia and Technology, I have done some writing during the past two years — a few stories for small magazines and a book which may some day be published. So you see I succeed in keeping busy."

In closing let's all remember that the duties of the Class Secretary in a large measure depend upon the cooperation of all the classmates, which being interpreted means, write to Dennie. — ORVILLE B. DENISON, *Secretary*, The Lamson Company, Syracuse, N. Y. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

'12 See what Santa Claus brought in: some nice long letters and a few odd trimmings to gladden the hearts of your secretarial department. We take pleasure in passing them along to you. We hope you'll be moved in this holy season, to follow the scriptural precept, "Go thou and do likewise."

Old Santa had quite a long trip with this one. It's lucky he's using the airplane these days. His traditional reindeer would have had bunions on their feet before they reached here all way from Beaumont, Texas, with Wallace J. Murray's letter. This doesn't mean that Murray is permanently located in the Lone Star State. He merely happened to be there when seized with the inspiration to write to Mac. If the Texas climate affects one that way, we only hope more of the boys are called to Texas. Murray adopts the novel method of running his biography backwards, which isn't so bad. He says: "I haven't written in years. I'll run my story backwards beginning at the present. I am employed by Arthur D. Little, Inc., with headquarters in Cambridge, Mass., but am working all over the map. This year I have spent most of my time in Texas, but I have been in Oklahoma for about a month and have made shorter stays in Massachusetts and Virginia. Last year I was working in Massachusetts, California, Illinois, Indiana, and Oklahoma. The year before that I was mostly in Rhode Island. This will give you an idea of the nation-wide chemical engineering service furnished by our organization and also the sort of gypsy I have become. My home address is still 18 Berkeley Street, Reading, Mass. Where I'll be in the future it is impossible to say, but I can be reached through the home address given above. Clarence Reiman and Clarence McDonough are both associated with me now at Arthur D. Little's. These are the only two of my old classmates that I see at all regularly, but I often run into others in various parts of the country. In the past I have been closely associated with Axel Pedersen and Norman Fredriksen of our Class, but at present I do not even

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know the address of either of them. I would very much like to learn their addresses. I was married in 1920 to Miss Ina Estelle Shordon of Fort Wayne, Ind. We have two children, Wallace Shordon Murray, seven years old, and Jean Estelle, four years old. They are all with me here in Texas. During the war I was stationed in Washington at the American University working on the development of processes for the manufacture of toxic gases as a First Lieutenant. In 1917 and 1918 I was with the National Aniline in Marcus Hook, Penna. During the school year of 1916-1917 I was instructor in analytical chemistry at Northwestern University, Evanston, Ill. In 1915 and 1916 C. K. Reiman and I, both of Course X, were studying together in Geneva, Switzerland, receiving our D.Sc. degrees in the latter year. In 1914 and 1915 we had also been studying together in Leeds, England. The two years immediately after graduation I was back at the Institute, the first year as an assistant in organic chemistry and the second as an instructor in analytical chemistry." — The above letter proves one thing very conclusively. A man may be mighty busy on his job, and travel all over the country, but still find time to contribute to the Class Notes. Thanks, Murray!

From Manchester-by-the-Sea, Mass., comes an interesting letter penned by Charles E. Dodge, I. He writes on the letterhead of the C. Dodge Furniture Company which gives us a clue at once to his present mode of livelihood. How our good professors — Messrs. Spofford, Breed, and the rest — must moan to see the way so many of their boys have side-stepped the indeterminate structures and railway curves. "I swore," says Dodge, "that I would carry your letter around in my pocket till I answered it, so here goes. After graduating from the Institute I went to work for the Aberthaw Construction Company of Boston as construction engineer, assistant superintendent and superintendent of construction on field jobs, till the fall of 1917 when I was drafted and went to Camp Devens. In December of that year I was commissioned Second Lieutenant in the Ordnance Department. I was in Washington, D. C., for five months and then at the Aberdeen Proving Grounds till September 1919. After getting out of the service I went back with the Aberthaw Company for a year and then settled down here in Manchester in this business which was founded in 1841 by my grandfather. Since my uncle's death in 1926 I have been proprietor of this small business. I enjoy it and make a comfortable living. I was married April 19, 1924. You see I got married on a holiday so I wouldn't ever forget the date, and have doubly enjoyed life ever since. I am a member of the finance committee of the town and was commander of the local American Legion Post the past year. I would enjoy seeing you or any of my old classmates in Manchester and would try my best to make you feel at home any time you are out this way." — Just received an announcement that Commander Jerome C. Hun-

saker, XIII-A, has joined the Goodyear Zeppelin Corporation as Vice-President with offices at 25 Beaver Street, New York City. Hunsaker until recently has been with the Bell Telephone Laboratories working on development of telephonic communications with airplanes in flight. At a recent program arranged by Daniel Guggenheim Foundation for the last Annual Safety Conference Commander Hunsaker spoke at length on two general subjects, "Is flying safe?" and "Is flying safe enough?"

At the fifteenth annual convention of the Society of Industrial Engineers recently held in Rochester, N. Y., Professor E. H. Schell, II, was one of the principal speakers. — Vincent Gallagher, II, has at last broken his long silence and stepped forth from 80 Maiden Lane to tell us a bit about himself. After leaving the Institute he went with the Commonwealth Edison Company in Chicago, later being transferred to the Central Illinois Public Service Company, where he sold motors to grain elevators that obtained power by burning corn cobs under the boilers. Finding that he could not compete with this cheap form of power, he went to work in 1914 as special agent for the Aetna Fire Insurance Company, with headquarters at Columbus. He was married during that year to Miss Agnes Newton of Cincinnati. In 1918 he enlisted in the aviation corps, and after a twelve-week course at the Institute, he was attached to the Bureau of Steam Engineering as motor inspector, located at Keyport, N. J., and later at New Rochelle, N. Y. After the war Gallagher joined the "American Fore" group of the fire insurance companies — the Continental, Fidelity, Phenix, American Eagle, and First American. As Vincent puts it, "by dint of hard labor, loyalty, brilliance and ability to dodge the boss when not working," he rapidly climbed the ladder of success until today he holds the position of Secretary, in charge of the Marine and Automobile Departments. As they insure everything from part of the cargo of the Graf Zeppelin to the bodies of dead Chinese being sent home for burial, he covers a good deal of territory, and is sailing for London at the present time. He boasts of a daughter thirteen years old and a boy eighteen months.

In conclusion, we ask you, fellow classmates, to guess what our suggestion is for an appropriate New Year's resolution. Correct, Horace, you guessed it the first time. Write to Shep or Mac. — FREDERICK J. SHEPARD, JR., *Secretary*, 125 Walnut Street, Watertown, Mass. DAVID J. McGRATH, *Assistant Secretary*, 411 Maitland Avenue, West Englewood, N. J.

'13 Your Scribe or High Secretary must apologize for the lack of class notes in the past issues of The Review. The high pressure of poor business caused him to use all energies in an endeavor to obtain a living. We are greatly indebted to our Under Secretary, genial Al Townsend, for the bulk of our notes. Your High Secretary wishes to add a few items and further notes regard-

ing the Reunion. I want to thank all of our classmates for their cooperation before and during the Reunion, and especially the committee who so ably assisted in making our Fifteenth Reunion a success. Telegrams were received from Fred Murdock, Stan Parker, Ross Sampson, Achard, and Caleb Peirce the night of our class dinner.

Your High Secretary had a very pleasant visit one morning this past summer with Fred Murdock, wife and daughter, in the Robert Treat at Newark. They were on their way to Boston. We missed Fred in Boston. — Hap Peck is now living in Sharon, Mass., and only commuting from there to Providence. — Our new President, Bill Brewster, has advised us that we should start our monthly dinners. Probably, by the time these notes are published, we shall have had several. — It is time to send our class dues to Prof. MacKinnon and start making plans for the Twentieth Reunion. We shall now turn the "Mike" over to "Graham McNamee" Townsend.

Of course these notes are late, particularly with respect to the Reunion. It took so long for us to get down out of the clouds after that delightful episode, it is only just now that we have been able to redescribe the proceedings. As a matter of fact, the newly elected Secretary has just come into the office of the newly elected office dog, dropped an envelope containing about one foot of miscellaneous correspondence and said, "Write these notes. If it is good, I get the credit; if it is no good, you get —." So here goes! The sequence of events started with the gathering of the clan at the new University Club, Boston, Friday morning, June 22. Five carloads of recruits started on time for the objective of the attack — Chatham Bars Inn, Chatham. Many reunioners drove direct to the Cape, so that by early afternoon the driveways around the Inn looked like an automobile show. It is hard to believe there are so many plutocrats in the Class. After looking at the Cadillacs, Packards, and Lincolns which gaily decorated the hotel drives, one Inn guest inquired if the directors of the Steel Corporation were holding a secret conclave. Your Scribe refused to bring his flivver into the town, let alone onto the hotel grounds.

Phil Capen and Jerry Fallon had been on the grounds for two days paving the way, and softening our path; more about them later. Butsey Bryant arrived soon after our efficient advance agents and immediately assumed office (as was hoped, planned and prayed for) as major-domo or something like that. And he sure did function. The intricate and sometimes befuddled details of a reunion will always be safe in Butsey's hand. By late Friday afternoon the majority of the crowd had assembled and after the usual effusions of welcome, ginger ale, and back-slapping, started to warm up the brassies and niblicks in anticipation of the tournaments later. Friday, after an informal dinner, was given over to whatever a man chose to do. Most, however, selected the easiest way. The class head-

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quarters on the second floor was occupied quite fully by the whole gang until the wee hours of the morning. Great crises were settled, friendships renewed, business failures dissected — you all know what happens under similar conditions.

Saturday was the big day and night. The day broke bright, but not so fair. In spite of the haze and fog drift, Chatham Bars Inn showed itself to be an ideal place. No better or more attractive place could have been selected. In the morning golf occupied the great and small. All strove for a good rating under Newt Eichorn's handicapping. The hotel course was not so bad, but Eastward-Ho! Oh, man, I never saw so many long faces in all my life. That course sure was a man killer except for Jerry Rich. Say, he could give Bobby Jones a five-stroke bisque and beat him. Jerry's one failing is too much modesty. After lunch a few stragglers drifted in, including your Under Scribe. But can you imagine it, one Nineteen-Thirteener actually had to go back home before noon. We shan't give him away. All during the afternoon the golf bug was still biting. The gang were still hanging on, like Jim Gallagher. The athletic *pièce de résistance* took place about 4 P.M. — the old ball game. As an admission of senility and decrepitude an indoor baseball was used. In fact, it was a good thing. If a hard ball had been used we surely would have had several mortalities and the Reunion would have become a requiem. There is no use to tell the line-up. There were six, seven, eight, nine and sometimes ten men on a side, or both sides, and the score was about fifty-four to forty-six in favor of which ever side you choose to honor. The game surely was a safety valve — if you know what I mean. Saturday night was the grand event. It was late in starting and late in stopping. The gathering of the clan in class headquarters from 5 to 7:30 was one of the best parts of the Reunion. The beds, chairs, dressers, window sills, and so on, were completely draped in human forms, wearing the class uniform — striped blazer coats with white sailor hats. The stories, lies, confidences, and telephone numbers exchanged here were legion. If those walls could talk!

But to hasten on to the dinner. The main dining room was rearranged, after the regular hour, for this event. The tables were arranged in a large horseshoe with members all on the outside. The entertainers performed in the center. We thought it best to keep the tables between the class members and the show troupe. Thirty-five members sat down to dine. The tables were tastily arranged and all sorts of paper novelties and noise makers added to the spirit of the occasion. Bill Mattson was toastmaster. The hotel did themselves proud in supplying us with an excellent formal dinner, and also in the way it was served. The dainty waitresses were by no means the least of the pleasant surroundings. While things were still normal a class election was held, and if I can believe Harry Peck's notes, the results were as follows: President, Bill Brewster, unanimous; Vice-

President, there was none, unanimous; Treasurer, Joe MacKinnon, unanimous in spite of the fact that he was absent; Secretary, Phil Capen, unanimous but one, Phil refused to vote for himself; Assistant Secretary, Al Townsend, no vote taken, just shoved into the job with no comeback. He will get back at them yet.

The entertainment was then put under way. The hotel orchestra furnished music during our meal. Then came the entertainers from Boston, the three Giglic Brothers and the two Warner Sisters. For nearly three hours we enjoyed a real good show. The town natives enjoyed it also, for they hung on every window sill available, and there were several windows in that dining room. Hartnett and Muther put on, as an entr'acte, a very good Spanish dance. The stage lost two good men when they tried to be engineers. Well, along in the shank of the evening, Capen and the hotel pianist (male) did a Salome act that was a knock-out. Capen's technique, while a little crude, surely had its fine points. His costume would have won a prize at a rummage sale. I don't know how many heard the speech or saw the articles, but Walt Muther exhibited the golf prizes to be awarded Sunday after the play-off round. The crowd was mighty grateful to Jumbo Mahoney for his generosity in donating the prizes — two handsome silver (I hate to say it) flasks. The party broke up officially about midnight and unofficially about 2:30.

Sunday morning was terrible for a while. When it is foggy, no place can touch Chatham. It was so thick you couldn't see the piazza from the living room. And then how it did rain! Not very promising for a Sunday holiday. After breakfast the rain stopped, and the golf nuts fared forth to finish what they had started. Jerry Lane, Walt Muther, and one or two others comprised the group. We don't know to this day who won the prizes, but since Muther was custodian, and the prizes were flasks, no doubt Walt managed to win second prize with Jerry Lane taking first, as he should. Since the day did not appear to be any better or to hold any hopes of clearing, the gang drifted out by twos and threes; a few stayed until after dinner and the remainder until Monday morning.

Thus endeth the Fifteenth Reunion. In passing, let us give honorable mention where due. To Brett of New Jersey, Carpenter of Ohio, Lane of Rochester, N. Y., Leshner of New York City, Reed of New Jersey, Strachan of New Jersey, and Tullar of Pennsylvania go our sincere thanks and admiration for finding time to come on and renew friendship, meet old and new friends, and join with the local classmates in keeping our Class in the foreground. Let's hope that the Twentieth Reunion will set a mark for real useful class gatherings. Some of you classmates, outside of New England, yes, even in New England, loosen up and let's have a word about your ideas for the Twentieth. If you wish, add a few words about yourself and it will be all right.

I will edit them as I see fit. Should you be too modest I can fix that; if you are too much the other way, I can fix that also. Give us news to put in The Review. A word of thanks is due the local committee who arranged all the details. First, to Capen and Fallon, without whom we could not have functioned. Butsey Bryant did himself proud as fiscal officer. Bob Portal arranged for the entertainment, and how he did go. Only he alone could have done so good a job. Jumbo Mahoney, Charlie Thompson, Newt Eichorn, and Walt Wardwell also played useful and important parts in the arrangements. And last but not least, the Class now has some official pictures. Butsey, with a movie camera, snapped the reunion members in official and unofficial poses. They came out real good and as soon as they have been captioned and edited will be ready for exhibition.

Now for a brief bit of news. Walter Whitehead is back in town. He has spent several months in Northern Ontario on geological surveys. He's going to occupy some of his time by lecturing on petroleum geology to the students in Course XII. If he will loosen up on his experiences we may have some interesting dope for the class news. Don't forget to write to your Secretaries. — GEORGE P. CAPEN, Secretary, 50 Beaumont Street, Canton, Mass. ARTHUR L. TOWNSEND, Assistant Secretary, Room 3-435, M. I. T., Cambridge, Mass.

'14 On November 6 the Boston group held their first luncheon of the season at the Engineers Club. L. F. Hamilton spoke most entertainingly and authoritatively on the great advances being made in the field of industrial chemistry. Those attending the luncheon were Horton, Fales, Atwood, Hamilton, Stump and guest, Crocker, and Richmond.

For reticence, our President, Buck Dorrance, holds the record. It is not until we chance upon some newspaper article telling of a new fame, do we realize his many accomplishments. From the Philadelphia *Inquirer* we learn that Buck's latest achievement is that of becoming a director of the West Jersey and Seashore Railroad Company. Add to this a directorship in the Federal Reserve Bank of the District of Philadelphia, and in the National Canners Association, the presidency of the Franco-American Food Company, and the general managership of the Campbell Soup Company, active membership in the Racquet, the Philadelphia Country, and the Riverton Country Clubs, and you will little wonder that Buck has no time to write of his activities. Best of all, however, is the fact that he is our own class President, and is going to direct the Fifteen-Year Reunion Committee personally. Buck has already made plans for calling the committee together in New York, and perhaps even before these notes appear, you will have heard from Buck and his reunion committee.

There is one very pleasant feature of reunion planning. It means a lot of correspondence, which in turn provides good

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live notes for The Review. — H. B. RICHMOND, *Secretary*, 100 Gray Street, Arlington, Mass. G. K. PERLEY, *Assistant Secretary*, 21 Vista Way, Port Washington, N. Y.

'15 Two years of struggling with this column reach a climax with two of the most outstanding and unusually interesting bits of news this month. What can I say — what would you say when you read this splendid letter from Lucius A. Bigelow and then learned of Gabe Hilton's marriage? This is the first line from Lucius since graduation, and I know you all join me in being glad to hear so much from him. Lucius writes from the Jesse Metcalf Chemical Laboratory, Department of Chemistry, Brown University, Providence: "Perhaps a reply from me may make you feel that you have raised the dead. But no, 'twas only a more or less profound somnolence. I am glad to contribute to the upkeep of the class funds, and to assure you that my interest in the institute and in our Class has never been really interrupted. Like so many others, I never fail to read the '15 notes in The Review, and with equal regularity resolve to contribute thereto — the next time. Of course, it is true that not having anything striking to report has helped in making me delay in writing, although I read anything about the other fellows with interest. So I will state the facts about myself thusly: Assistant at the Institute in 1915-16; graduate work, one year at Harvard; two at Yale; Ph.D. in organic chemistry, Yale, 1919; instructor at St. Lawrence University, Canton, N. Y., in 1919-20; and following this came to Brown University as instructor in organic chemistry, being advanced to assistant professor in 1924. There you are!

"I find that I enjoy teaching very much for its own sake, especially when combined with a moderate amount of research work, such as is possible in my present position. A considerable portion of my time has been spent in student advisory work, and in connection with the local sections of the American Chemical Society, the Prize Essay Committees, and so on. The boys say that I make them step right along and work hard, and if this be so, you may be sure I learned that lesson in the Walker Building. No, I am not married. This is either mighty unlucky, or mighty lucky, which, I'm not quite sure. Such things depend upon the circumstances, you know. Some of my friends keep up their courage well and assure me that while there's life there's hope. I am at present rooming with the family of a classmate, John N. Dalton, who is at present director of the worsted laboratory at the Pacific Mills in Lawrence, Mass. Our acquaintance began in the organic laboratory at the Institute, and has grown into a close and valuable friendship. John has been making good progress in the industrial field, and sometimes when I meditate upon the vicissitudes of fortune I sort of wish that professional remunerations might be calculated on an industrial basis. What am I

saying? No professor should ever meditate upon filthy lucre anyway! More seriously, may I not extend my best wishes to all our old friends of '15 and assure each and every one that a hearty welcome will always be ready for him wherever I may be. Keep up the good work in The Review."

The most confirmed bachelor of us all has finally succumbed to marital bliss. Theresa Josephine Robinson and Gabe Hilton announced their marriage on Wednesday, October 17, in New York. That's all we know. Can any one tell the why or wherefore? — Our class dues have been swelled by twenty-seven more checks, a total of ninety-nine, or about 22 per cent of the Class. Are there a few more delinquents who will raise that to an even 25 per cent? The long distance prizes go to Douglas B. Baker, Madrid, Spain, and to Pellian T. Mar, Shanghai, China. Mar finished with 1916 in Course XIII and I presume returned to his native land. His letterhead of The Kiangnan Dock and Engineering Works is unusual with its Chinese symbols. These distant replies show a splendid class spirit. — I recently lunched with Jim Tobey in New York. He says M. W. Cowes, XI, is with The Hackensack Water Company, New Milford, N. J., and that Bill Holway has returned from Oklahoma to a position with the Lock Joint Pipe Company, Newark, N. J.

On Monday, January 7, at the City Club, 35 West 44th Street, New York, we shall have our second class dinner. This is a little advance notice so you can prepare for it. Let's have a big get-together this year. The fellows in the New York mailing zone will receive return postals. Any others in town or wishing to come just drop into the Club that night. — M. F. Coolbaugh, III, is in the office of the President of the Colorado School of Mines, Golden, Colo. — Joe Phelan, with the H. P. Hood and Sons, dairy products, Cambridge, Mass., sends his best regards by way of explaining why his check was late. You know, Joe was recently married. — Max Woythaler wise-cracks from Framingham, Mass.: "Hey, you big stiff, this check is on condition you vote for — and continue to drink all you will. If not, return the check." I deposited the check last week. — Here's a good letter from Douglas McMurtrie: "Enclosed is a check for the class dues. I was sorry not to come through last June in answer to your appeal for deputy collectors, but I was serving a four months' sentence at LaTuque in a development which required continual attention and didn't leave enough time even to write home. Fortunately, Mrs. McMurtrie and one of the boys were in LaTuque during part of it. Today I'm out again after another sixty-day sentence and just now am standing by to meet Mrs. M., George and Robert on their return from a trip to Paris." Maybe it's just as well he was up in the cold north during the summer and not now.

The following two letters and one clipping will show you how far and wide our boys have scattered and what inter-

esting work they are doing. Howard L. King, I, writes from Longview Road, Port Washington, N. Y.: "A copy of The Review that arrived today reminded me that I have a letter to write. I have left the Holland Tunnel. The job, as you know, is finished and the continuance of my salary might have been an embarrassment to the States of New York and New Jersey. I am now with the Mason and Hanger Company on the Fulton Street-East River subway tunnels. It used to be my boast that I could take my compressed air or leave it alone, but as the years jostle one another along, it becomes plain that I am a hopeless addict. My new job, however, differs from the Holland Tunnel job in that it now devolves upon private capital and not upon the state to support me in the luxury and comparative idleness with which civil engineers are so familiar. Mr. and Mrs. C. F. Wolfe visited my place in Port Washington last week." — Bill H. Smith, I, writes from the Naval Operating Base, Eleventh Naval District, San Diego, Calif.: "Here is the check for class dues as requested. I think it is about time I let the boys know I am still in existence. As the letterhead indicates, I am still in the service, having attained the rank of lieutenant commander in the Civil Engineer Corps about three years ago. After two years and a half in the Panama Canal Zone as Public Works Officer of the 15th Naval District, I was transferred here about two years ago. This is one of the most active stations we have, and it keeps us going pretty steadily to hold our own. We are averaging about \$1,000,000 worth of work a year and it covers an infinite variety of jobs. We recently finished a \$700,000 hospital project, and the reconstruction of a marine railway at \$200,000. We are now spending about \$250,000 on a concrete pier, and about \$500,000 on new construction at the air station. Besides this we have a score or more of smaller contracts in progress all the time. We have several other Technology men in the organization; among the officers are W. M. Angas '17, H. E. Wilson '19, and F. R. Hewes '19. This California climate is pretty enjoyable, the only disadvantage about it being the amount of boasting the natives do on the subject. I am enjoying my tour immensely, but hope that when it is finished the powers that be will recall me to the east coast. My kindest regards to yourself and any of the boys."

From the September 15 issue of *Textile World* we read about H. W. Anderson's recent European trip: "H. W. Anderson, President of the Fidelity Machine Company, Philadelphia, manufacturers of true-rib hosiery and fabric machines, and also President of the Clyde Mills, Inc., Newton, N. C., is back in his office after a trip to England and practically all of the countries on the continent, including France, Spain, Italy, Jugo-Slavia, Hungary, Austria, Czecho-Slovakia, Germany, and Belgium. In keeping with the trend of the times, a large part of his route was covered by express planes. In making his extended trip in Europe, Mr. Anderson was primarily interested in the

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most recent developments in knitting and textile machines in general, future style trends in hosiery, and an analysis of the absorptive capacity of the continental markets for American knitting machinery and American hosiery. . . . The picture with the long article shows Andy a little bald, but otherwise not much changed from undergraduate days.

For the interest of those who have acquaintances in the Class of '17, I recently lunched in New York with Tom W. Ryan '17, who is with Thompson-Starrett Company, New York. He is actively interested in the work in the new course in building construction, now in its second year, I believe, at the Institute. — Jeff Gfroerer, II, is district representative for Dodge Brothers, Inc., at Indianapolis. I spent a week-end with him there. These notes are being written just before Thanksgiving, but will not appear until after New Year's, so I wish you all a happy and enjoyable Christmas and a successful and prosperous New Year. — AZEL W. MACK, *Secretary*, 377 Marlborough Street, Boston, Mass.

'17 Dick Lyons has been made Vice-President and Director of the Skelly Oil Company. Both Walter Pond and Bill Gray sent us in clippings about it, and when anything induces either of these Course III men to send clippings, it is time to sit up and see that notice is taken. Dick has been in charge of the land and geological departments for the past year. — We are told that Samuel Siegel passed away recently. He was formerly a patent examiner in Washington, and more recently a patent attorney with offices in Boston. — William Ayres Gray, Jr., is now selling oil refineries for Foster Wheeler Corporation of 165 Broadway, New York. — From The Review Office comes the following notice: "Airplane Structures" by Alfred S. Niles '17 and Joseph S. Newell '19 will be published during January of the coming year. The authors, military and commercial experts on airplane structures, place emphasis in their book on the theory of stress analysis operations. They include sufficient tables, charts and design data so that methods for determining the stresses in the members and the allowable stresses in the more common materials are completely described. This book will probably be reviewed in the "Books" section of The Review later on. — [See also the last paragraph of the '15 notes — The Review Editors.] — RAYMOND S. STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass.

'18 By the time this comes out in The Review the Alumni Dinner will have been announced, and I sincerely hope that there will be a record attendance. The Class of '18 doesn't usually show up very well, but we ought to. Our rivals, '17 and '19, frequently are way ahead of us in numbers. Let's make a start now that we have been out ten years and have more show up at these functions once in a while. That is the only time we get together as an

alumni organization. The Class of '18 should be there.

Everyone who subscribed for "The Eighteenth Amendment" must have read it from cover to cover by this time, and I imagine that some of the covers are almost worn off. I know that my family has used my copy pretty hard since I got it. The fellows who did not subscribe are out of luck, as they would have found out much about their classmates in that volume. Let's hope that this is just a starter for what will be done at another time. Every ten years and perhaps every five years a volume such as this could be published, and I know we would find out a lot that we never knew before. For the next issue of The Review I shall go through the statistics that we have in this volume and tabulate them.

I have to report two Benedicks in the Class since my last notes went in. The Boston *Herald* of October 7 reports the marriage of Clarence M. Ellis and Miss Clara Frances Russell, daughter of Mr. and Mrs. Fred N. Russell of Winthrop. The *Patriot Ledger* of Quincy, Mass., tells us of the marriage of Frederic A. Lane and Miss Dorothy Clement Haskell of Lynn on October 5. It speaks of Fred as being from New York, but the class records say that he has not left Massachusetts. Never mind, you fellows down in New Jersey, look him up at his new home at 255 Ampere Parkway, Bloomfield, N. J. Congratulations from the Class to both Clarence and Fred. — I told you last month about Wendell Kayser's return to California. Now I have the information that his name may be added to the list of vice-presidents which, from the notes received for "The Eighteenth Amendment," we found was quite large. He is Vice-President of Gorman, Kayser and Company, stocks and bonds.

Sister St. John Nepomucene, formerly Elizabeth Fennessey, is now located at the Convent of Notre Dame, 162 Federal Street, Salem. We are glad to know that Elizabeth is back in this country again after her sojourn in Belgium. I take it from the address that she must be teaching at Salem. — Paul McGreenery, who has been sojourning in Nashua, N. H., for the last few years is now located in the Boston office of Carter, Rice and Company, and is making his home at 138 Warren Street, Arlington. I think that he and Mrs. McGreenery would be glad to see any of the fellows there. We are glad to have Paul back with us here in the Boston group. — Another one of the Class who has returned to the vicinity of Boston is Albert Haertlein, whose address is now Pierce Hall, Harvard Engineering School, Cambridge, Mass.

Did I tell you about seeing a number of the Class at the American Chemical Society Convention in Swampscott in September? Indeed I did and I saw some that I hadn't seen since the days in Cambridge. On that list are Howard Cyr and his wife from Palmerton, Penna.; Mrs. Marion Coes Kenney and her husband, who was a 1914 man, from Wilmington, Del.; Ernie Bridgewater from Wilmington; James Lomax Clark, who is down in New

Jersey; John Parsons from Erie; and last but not least, Dick Wilkins and his wife from so far away as Salem. We could almost have held a class reunion right there if we could have gotten together at any one time. It was good to see so many of them. I must not forget one other I saw there. That was Jacob Young, who is with his father in business in East Boston. He was at the Convention for only one evening as far as I could find out.

I should have told you sometime ago that our old friend Richard Rimbach is now Vice-President and Treasurer of the Instruments Publishing Company, located in Pittsburgh, Penna. They are the publishers of the magazine *Instruments* which is industrial and scientific. — I haven't heard one word of news direct from any of the fellows since the time of the Reunion, and you know I cannot repeat that all the time. Please drop me a line or give me a telephone call at the office when you are passing through the city, and I will gladly jot down any notes you have for me. — GRETCHEN A. PALMER, *Secretary*, 148 State Street, Boston, Mass.

'19 When you receive your copy of The Technology Review in the post, I suppose that you are first impressed by the excellent cover design but that you lose no time in turning to the News from the Classes section and thumb through the pages until the column headed '19 is reached. And reaching it, you read eagerly the notes concerning several of your former classmates. Your curiosity and interest being now satisfied, you begin again at the cover and read The Review much as any other magazine. What you do, upon receipt of your Review, is also done by most of us, but in reading about others it seldom occurs to any of us that we too have a story which would interest other readers of the '19 column. Now it is the purpose of this paragraph to remind you that we are all interested in a word or two telling where you are located, what you are doing, and what 1919 men you may have recently met. The class notes column is a clearing house for this information, and may I now suggest that you send the undersigned some notes by an early mail so that eager readers may read?

There are some notes at hand. To begin with, on October 17 a jolly group of men met for an informal dinner at the new quarters of the Technology Club of New York at 22 East 38th Street. The purpose was a friendly get-together with no business of any kind discussed. After dinner there was one table of bridge, and the others engaged in a congenial chat. Those present were: Don Way, Freddie Given, George Paterson, Leo Kelley, Tom Lloyd, George McCarten, Oscar Mayer, Henry Cassidy, Myles Connors, Fish Gilbert, Fred Rasmussen, Al Reynolds, and Dusty Rhodes.

Carl Rogers was not at the dinner just mentioned above for the good reason, as we understand it, that he was on his honeymoon in France. — We learn that Tom Lloyd is now working for the Fox

Case Corporation in the manufacture of movietone apparatus. — Oscar Mayer is building a hotel in Stamford, Conn., and we believe it is now nearing completion. — Leo Kelley is back again in New York, having spent the summer in the West investigating the effects of lightning discharges on telegraph printers. — We learned from a roundabout source that George French is the proud father of an eight-pound baby boy. George is now with the Warren Paper Company in New York. — Announcement is made of the marriage of Miss Hazel Sandsbury of Boston to Carlos Krebbs of Jamaica Plain. The ceremony was performed in Boston. — We have also to announce the marriage of Miss Josephine Amaru of Lexington, Mass., to Eugene Mirabelli of Dorchester, Mass. The ceremony was performed in Lexington. The honeymoon trip included three months abroad, when France, England, Switzerland, and Italy were visited. They will make their home in Cambridge.

Don Way and Bill Langille visited the Institute together a few weeks ago. Don was much taken with the medical facilities now afforded in the new wing at the end of the Mechanical Engineering Laboratories. — The Secretary wishes to take this opportunity to wish all classmates a happy New Year. — WILFRED O. LANGILLE, *Secretary*, 144 Acme Street, Elizabeth, N. J.

'20 If any of you happened to notice that no notes appeared in last month's Review, I might remark that the reason for said lack was that there weren't any notes to note, and to be sure, we are not much better off this month. Surely the Class of '20 is not so old or so dead as to assume that nothing has happened worthy of note in an interim of two months. How about it? Will you donate a mite of cooperation? — Bunt Murphy, the class wanderer, sends the glad tidings of his marriage way off there in Beirut, Syria (get out the atlas), to Miss Dorothy Belcher Flagg. Bunt, old fellow, the Class sends you its warmest congratulations. Our only wish is that we might drop in on you and extend them in person. Maybe with transportation shrinking the world more and more, we'll be able to spend a week-end before long and still get back to work on Monday. — Scott Carpenter announced the arrival of a son on October 7, Edward Wirt Carpenter. Scott, you will remember if you read the notes, is now in Milwaukee with the Wisconsin Electric Company. — Al Fraser, Wellesley's popular florist, influenced by the large number of boys sponsored recently by the Class of '20, adds another to the list, Robert Birchmore Fraser, born on August 13. Scott and Al merit our heartiest approval.

Now, you fathers of daughters, take heart. A. A. Brown announces the arrival of Mary Josephine on October 28 at El Paso. The famous team of Brown and Syner is still sticking together. Syner, however, got married a little sooner than Brown and is one up, as you might say, as he boasts two children.

By the time these notes reach the light Buck Clark will be a Benedick, as December 15 has been set as the day. Buck will continue to reside in Springfield. — HAROLD BUGBEE, *Secretary*, 9 Chandler Road, West Medford, Mass.

'21 Members of the Class continue to exhibit their ability to publish technical papers, at the same time showing their intense dislike for other written material in which the use of the first person singular might be necessary, such as letters to their Class Secretaries. Not a single letter has been received from a member of the Class for inclusion in this issue of The Review, and the only signature of a '21 man we have seen thus far is that of H. F. MacMillin, II, appended to his monthly advertisement to members of the flock. — R. L. Rutherford, XII, is the author of a paper entitled "Geology of the Area between North Saskatchewan and McLeod Rivers, Alberta," which has just been published by the Geological Survey Division of the Scientific and Industrial Research Council of the Province of Alberta, Canada. Dr. Rutherford has already published a number of other papers on the geology of other areas in the Province of Alberta. — Bob Thurston, X and X-A, stopped in Chicago about the middle of November, and with his wife paid your Secretary and his wife a short visit. Bob has been in Cincinnati with the Procter and Gamble Company for several years doing chemical engineering work. Bob has a good family started with youngsters five years old and two years old.

Miles Zoller, XV, is still with the Eagle Picher Lead Company, with headquarters at 134 North La Salle Street, Chicago. Miles is on the road about 75 per cent of the time as a sales engineer. Your Secretary is away about 50 per cent of the time so we two have a difficult time to get together. There are to be two future Technology students by the name of Zoller. At present Miles's two boys are four and one-half and one and one-half years old. — John T. Murphy, XV, and your Secretary met last July while en route. Murphy is a jack-of-all-trades with the Prest-O-Lite Company, 30 East 42d Street, New York, N. Y., and is on the road much of the time. This past summer he was successful in being able to follow the hot weather from New Orleans to Chicago and then to New York. His 200 plus or minus pounds were evidence of good health and prosperity. Their family is graced by one boy. Murph told me that Herb Reinhard, XV, is in Boston, associated with his father in tax work and that Jack Sallaway '22, II, is in Brooklyn with Crew Leverick in the oil game. He said George Dandrow, Jr., '22, IX-B, is with the Johns-Manville Company on technical sales work, handling insulation for driers.

Your Secretary quite regularly sees Stuie Nixon, XV, when he is en route. Stuie is with the Continental Motors Corporation, with headquarters at Muskegon, Mich. Being a sales engineer and handling the territory east of Denver and

north of Louisville, including the Dominion, Stuie used yards and yards of train tickers. His calls do not include the large cities so milk train and bus schedules are at his finger tips. Stuie is one of the few unmarried '21 men, and he gives no satisfactory explanation. Stuie advised that George Gokey, XV, left the Ford Company. This was after a six week tour of Europe, including France, Germany, Switzerland, England, and so on. He also advised that Harold Greenwald, II, was a refrigerating engineer with the Whitehead Refrigerating Company in Detroit. Stuie says that Herb Thaden, II, is Vice-President and General Manager of the Thaden Aircraft Corporation in San Francisco, manufacturing all metal planes. These were described in the March *Air Digest*. — John C. Mahoney, X, stopped and saw your Secretary in Chicago some time ago. He is with the C. H. Leach Company at 225 Broadway, New York City, manufacturers of Hot Exchanger equipment and condensers for oil refineries. He advised that H. R. Swanson, X, is a distillation engineer on pipe still and bubble towers and so on, for the Foster Wheeler Company at 165 Broadway, New York. — Saul Silverstein, X and X-A, is regularly through Chicago on business for the Bigelow Kent Willard Company of Boston. Joe Lurie, X, who was associated with him is now in business for himself in the consulting and development game. Saul advised that Fred Binns, X, has been in Europe for some time for the Virginia Smelting Company of Boston, with whom he has been since his graduation. Fred had a second honeymoon and business trip to Cuba a year ago with expenses paid, which is not too tough to take.

A Happy New Year, gang. And may we suggest that you include a resolution to say it with letters for the rest of the year. — RAYMOND A. ST. LAURENT, *Secretary*, 225 Cleveland Avenue, Whiting, Ind. CAROLE A. CLARKE, *Assistant Secretary*, Victor Talking Machine Company, Camden, N. J.

'24 The Reunion — little was said about it last time, and not much more can be said now. Plans are in formation, and by the time you read this, much of the machinery should be in operation. At the present there is very little detail arranged, but it seems quite certain that the Reunion will be held the week-end of June 1. In selecting this date the committee had in mind the fact that it immediately follows a holiday. To some this will be of advantage, but to others it may be a detriment. It may permit many to come from a distance who otherwise would not be able to come, but it is hoped that with this early warning the holiday will not interfere with the plans of those to whom it might be a detriment. The date was set without regard to this fact, but because it was the best date to permit activities while the Institute was in full swing. The week-end also precedes Senior Week and Commencement.

Five years are very nearly completed and to many it seems like a very short

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time to look back upon. It's short enough to be able to remember the Institute and those with whom we went to classes, but it's also long enough to want to get back and meet them again. Every reunion is a success. And every one who goes to one enjoys himself. A big turnout is going to insure a big time. The extent of the success is entirely dependent upon the number showing up. We won't take the space here to prove the statement, but will let you reason it out for yourself. What we want you to do is plan to be there so that you can enjoy yourself and help others to enjoy themselves. The remarks that Fred Hungerford makes are good points; I am entirely in accord with him and what he says goes double for me, both in regard to the Reunion and in regard to notes.

Fred Ashworth has left Providence and is now with Emerson and Mason, Inc., at 834 Commonwealth Avenue, Boston. — And now for the weddings. Two members of the Class were married Saturday evening, October 6. Edmond E. Russell was married to Miss Helen W. Vincent of Edgartown in Arlington Heights, Mass. W. T. Cook, Schenectady, served as best man. Ed Russell is with the New England Tel. and Tel. Co. in Providence. The other wedding of that day was that of Stewart B. Luce to Miss Alma Hermann of Woburn. Luce took a Master's degree from the Institute in the Class of 1927. A week later Prentiss B. Alger of Brookline was married to Miss Frances Martha McCullough of Newton Center. They are now living at 22 Wallingford Road, Brighton. The fourth wedding I have to report is that of Douglas F. Elliott on October 30 to Miss Anne Trueheart Bonduant of Birmingham, Ala. And the last one I have is that of John Oliver Holden on November 10 to Miss Grace Caroline Tucker of Brookline. They are now living at 24 Lynde Street, Boston, Mass. — H. G. DONOVAN, *General Secretary*, 139 Girard Avenue, Hartford, Conn.

COURSE II

We certainly are in the running with the rest of the 1924 graduates. Regardless of what the undertaking may be we are sure to come through among the leaders if not in the first place. In this competition for the least amount of information that gets to *The Review* we seem to have scored another overwhelming victory.

To prove the foregoing I cite an experiment that I tried a few weeks ago. I started by sending out about twenty-five letters to those whose recent addresses were available. Each envelope carried a return address in case the letter could not be delivered. None were returned. I received answers from two. That makes the average just about eight per cent. Any one who has been in Technology classes should know that you can't get anywhere with a rating like that, unless you are inviting disaster, and it looks like that was what we were out after and would get. Some of you have not as yet received one of those letters, but I was working under a false impression that if I sent them all out at once I would get an ava-

lanche of mail, which could not be given the deserved attention. Making some more mental calculations, it can be easily determined that if I sent letters to every one of you, I would only get about fifteen letters. In short, you fellows certainly are a lot of help in getting notes in *The Review*.

From the great pile of letters from members of our Course, I find the first one from Ed Hanley, who expresses the belief that after about five years in a dormant state the Class of 1924 is beginning to wake up. It is too bad to throw a wrench in the gears on such an idea, but it isn't quite the truth. They are still dormant! Ed is working in the cost department of the General Electric Company at Schenectady. Ed says that he is like all golfers, can't play but tries. He also claims to be still single and with nothing startling to report. — Another, and the only other letter from this magnificent pile of correspondence, is from Rolf Julsrud. Rolf is now assistant chief engineer in charge of design development, test and production for the Fuel Efficiency Engineering Corporation of Birmingham, Ala. He reports having recently met Colby Bryden '22, Course II, and spent the day at Muscle Shoals with him. Bryden is with De Laval Turbine Company. — Rus Ambach '25, Course II, has left the Alabama Power Company and is now with the Pennsylvania Crusher Company. — As for myself, I am still with the Atmospheric Nitrogen Corporation of Syracuse, N. Y. This company is a division of the Allied Chemical and Dye Corporation. I am now working on the Syracuse plant which manufactures anhydrous ammonia.

Having stolen some news from other classes to fill up these columns and told you all how good we are, I think I had better stop. If our attendance and spirit is anything like that which is indicated in these columns, our share in the Five-Year Reunion should be a huge success. What is your answer to the foregoing charges? More silence? — FRED S. HUNGERFORD, *Secretary*, Solvay Club House, Solvay, N. Y.

25 As usual, Professor Charles E. Locke '96 has furnished some news about Courses III and XII. From the *Engineering and Mining Journal*: "Dr. Robert J. Anderson, Vice-President of Fairmont Manufacturing, Fairmont, W. Va., arrived in New York on October 5, on the S.S. *Berengaria*, after an extended trip through Europe. He visited a number of the principal aluminum plants abroad and made a study of the foreign aluminum situation. He was accompanied by Mrs. Anderson." — Mr. and Mrs. Gilbert W. Noble announce the arrival of Alice Boyd Noble on October 17, 1928. Gilbert was not idle very long after leaving the Marland Oil Company. In September he entered the University of Oklahoma, taking courses along mechanical engineering lines with the senior class in the petroleum engineering school, but he was there only two weeks when he received an offer from A. F. Melcher of Tulsa, Okla., to become associated with

him in consulting and research work on the improvement of petroleum production methods. One of his first jobs in this new capacity was to make a thorough study of one of the oil pools which is being drained by the adjoining companies. This involved the preparation of a mass of data for evidence in court. Their work in general deals with the determination of the porosity of sands and the reserves in oil and gas properties with estimates of ultimate yield and of approximate rate of production. Melcher is a recognized authority on the process of repressing oil sands in order to obtain added production, and as this process is being taken up by the oil companies it means that there is a good future promise for Gilbert in his new job.

Paul Goble is with William H. Babcock, Chicago, real estate valuator. He is the father of two children. — On his way from San Francisco to Pittsburgh, Malcolm Davis called at *The Review* Office. Although he didn't say why he took in Boston on the way, he did say that he will work for the Duquesne Light Company, 435 Sixth Avenue, Pittsburgh, Penna. — Malcolm MacDuffie is now an instructor at the MacDuffie School in Springfield, Mass. — The Mason Engineering Company, distributors for the Petro residence and industrial oil burner, has opened a retail salesroom at 380 Worthington Street, Springfield, Mass., under the supervision of Trafton Mason. He and Scott Emerson have been associated in business since graduation. — Herbert P. Sontag is now employed as methods engineer for the Mohawk Carpet Company in Amsterdam, N. Y.

Anderson, Ind., where Arnold Marshall is working for the Certain-teed Products Corporation, doesn't seem to be a very up-to-date town. The paper he writes on has "On active duty with the A. E. F." at the top, and at the bottom, "To the writer — Save by writing on both sides of this paper. To the folks at home — Save food, buy liberty bonds and war savings stamps." Probably it isn't as bad as it sounds, for Arnie says he is having a good time there, even if he does miss the gang in New York. — Chuck Knight claims to be a Puritan of Plymouth now. He is in the mechanical engineering research laboratory of the Plymouth Cordage Company and lives at 210 Court Street, Plymouth, Mass.

To quote from a letter from Frank Frickers: "I have been reading *The Review*, and thoughts of what some of 'youse writin' guys' are doing so nobly inspired me to this annual note of doings in my neck of the woods — meaning particularly the high spots of my own life since last I wrote. Probably most important, economically speaking at least, is the information that no woman can yet call me 'Sugar' or 'Darling' or 'Sweetie' with wifely concern in her eyes. My experience in this thing called single bliss is a year older and as safe as can be. With a job like mine, and no great inclination to acquire wife and child, it isn't strange that I am still single. My occupation is the same: special representation for the

Ethyl Gasoline Corporation in the states of Florida and Georgia, with nominal headquarters at 25 Broadway, New York, where my outfit is beginning to accumulate gold for the phenomenally successful General Motors. While I don't happen there often, I receive my mail and The Review at the Atlanta Athletic Club, Atlanta, Ga.

'In my last note I told you what a godsend to the motoring public our Ethyl is, but I could talk much longer on the subject now. For the past year has seen me do everything from diagnose carburetor and other motor troubles to delivering sales talks to oil company employees and learned discussions on high compression motors and fuels before college classes. And with it all I am seeing the world, inch by inch, starting with all towns of less than five hundred in Georgia. But winter's blasts won't catch me this year, nor did they last year, for that matter. It is my very good fortune to be able to plan my work so that I can bask in Florida's sunshine and moonshine during the cold months. This year, after a dash down to Tampa, Jacksonville, and Pensacola during the next two weeks; a week's conference of our company's representatives in Detroit; and the usual visit home for the holidays; I'll be able to centralize my activities down in the sunshine south of Georgia until March. I am planning to visit Boston about December 15 or 20 for a day or two and I'll be in New York, probably, en route to Baltimore where my folks still live. I have a kid brother at Technology and am planning to see him for a day or so. Golf, traveling, and working are about all I do, but I do read The Review and hope to see more about '25 in it soon.'

We are more than pleased to hear from you, Frank, and hope to see you when you get to New York. It would certainly be a great pleasure to the secretaries if a few more would write an annual letter. We can't write to each one very often, asking for news, so when you get the urge, don't wait, write all you can about yourself and any classmates you may have seen. — FRANK W. PRESTON, *General Secretary*, 102 East 22d Street, New York, N. Y.

COURSE I

Well, fellows, business is picking up. Since the appearance of the November issue of The Review two of our classmates have come across with accounts of their stewardship. Hardly had the last issue started to accumulate dust when Westland crashed through with a nice letter telling the world that — well, read it for yourself. "Since graduation I have been a very interested reader of your various course notes, but have never followed that impulse to write you until now. I was very interested in reading of your marriage, and so on. You quite evidently started a very good example for it pleases me to announce that the former Miss Alta Grant of Wollaston and yours truly said the customary 'I wills' on October 12 and after a trip through New England are now at home at 190 Norfolk

Street, Wollaston, Mass. I have met quite a number of '25 men from time to time, but your notes of this past issue seem to cover the activities of most of those whom I have seen. George Olsen is back in Pittsburgh with the McClintic-Marshall Company and seems to be much interested in his work of estimating bridges and buildings. I am still with the Marion Steam Shovel Company, being their representative in New England and Eastern Canada." Well, Westy, all of the fellows might not agree with your idea of a good example, but I am sure that they will all join me in extending best wishes to Mrs. Westland and you.

The other classmate to be heard from was Glen Gilboy, who was close on Westland's heels. After you have read Glen's letter, go back and read the first paragraph over again. Here it is: "I am beginning to realize what a tough job it must be to be a class secretary and to try to contribute interesting news items with little or no cooperation from the gang. My own negligence in that regard has been due entirely to forgetfulness, and I suppose the same is true of most of the other fellows. We all like to hear what our old associates are doing, but it is too much to expect you to keep a watchful Pinkerton eye on all of us, and to report our peregrinations in spite of our seeming reluctance to impart the necessary information. Bigger and better letters, and more of them, should be our slogan. As for myself, there is very little to report. I have never left the Institute, and I have a sneaking suspicion that down in the Bursar's Office they have me listed among Furniture and Fixtures. Since graduation I have been working with Dr. Terzaghi, who is without doubt the outstanding authority on foundation and soil mechanics. I occupy a good-sized laboratory on the third floor of Building 1, where the C. E. Museum used to be, and spend my time in a glorified phase of the childhood pastime of making mud pies. You have no idea what fascinating complexities are bound up in the humble, messy bulk of a mud pie. Its behavior presents mathematical difficulties which make stress analyses in steel and concrete seem like exercises in high school arithmetic. Soil mechanics offers a field of unlimited possibilities, and its usefulness in practical engineering is increasing by leaps and bounds. I consider myself fortunate to be in on the ground floor. . . . I hear from Tom Lowe once in a while. He is still teaching at the University of Florida. He now writes Sr. after his name; Thomas Marvell Lowe, Jr., arrived a couple of months ago. Can you feature Tom in the rôle of *pater familias*?" Now go back and read that first paragraph over again!

It looks as though Tom Lowe had slipped one over on us, officially at least, and we hasten to extend our belated congratulations to him and his family. One other item worth mentioning is that Gilboy was awarded his Doctor of Science degree last June. These notes are being written before Thanksgiving, but by the time you read them Christmas wishes and New Year's resolutions will

be in order, so here's wishing. — HAROLD V. ROBICHAU, *Secretary*, c/o Atmospheric Nitrogen Corporation, Syracuse, N. Y.

COURSE V

Today's little offering is fraught with apologies since it is Course V's first showing in this year's Review. I missed the first issue because the bass happened to be biting on the very day I had scheduled for this work. The loss of my father forestalled any news appearing in the second issue. By the way, I wish to acknowledge the letters of sympathy that I received from some of you. They helped a good deal when I needed help.

Now everybody hold on tight for the next act. Mr. Robert Dunwoody Breer squawked his first squawk on November 11. Yes, sir, our Paul has went and made a Poppa out of himself. Little Bobbie and Mrs. Breer are doing nicely and Breer *père* seems to be coming around quite well also, although he is still in somewhat of a daze. I've been over to Lynn to see the little tike and he is real cute, although I am very much afraid that he is going to look like Paul. But this isn't the time to wish a kid any hard luck, especially when he's badly enough off as it is, his birthday coming on a holiday. Paul says that he is going to be the first Technology man to father a son and not destine him to Technology the very next day. From the way that youngster was yowling, I'm all for training him as an understudy to Joe Humphries. — We have other good news. Alice Clement Oliver and William Sanford Bishop (that's Bill all right) were married on July 7 in Bayonne, N. J., where Bill has been located for some time. This department congratulates Bill and sends its sympathies to Miss Oliver. — Your Secretary spent an uninteresting summer. The one high light was a trip made from Buffalo, N. Y., to Boston in fifteen hours. It was done on a bet, but it almost killed me and pretty near finished the car. It's been rheumatic ever since. I'm settled in Boston now and will be for a period. I've a nice little place right on Beacon Hill and am going about the business of being the biggest bean in Boston. The latest news from my firm mentions a prospective survey of European markets, especially in France with your Secretary in the rôle of surveyor. I'm all hot and bothered over the idea and pray nightly that the thing breaks right. If it goes through I'm going to write the report of that survey before I leave New York so that I can "investigate" conditions with nothing on my mind. — GERALD MILOT, *Secretary*, 117 Pine Street, Attleboro, Mass.

'26 Der Konvergenzpunkt will not intrude upon the domain of the Course Secretaries by making this introduction verbose. Just before these notes were prepared G. M. McNeil, one of Eddie Miller's late protégés, visited the works. He continues his work in the inspection department of the Factory Mutual Company. During a trip he has just made out in Ohio he encountered R. G. Spear, who

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continues with the General Motors Company doing statistical work, and according to reports, doing it well. His new address is 7534 Lawton Avenue, Detroit.

Announcements of two engagements have been received. "The marriage of Miss Margreth Tanning, daughter of Mr. and Mrs. Alfred E. Tanning of York, Penna., to Mr. Robert W. Richardson of Boston will take place some time in the spring. The engagement is just announced by the parents of Miss Tanning, who is a graduate of the Martha Washington School in Washington. . . ." — "Announcement is made by Mr. and Mrs. John A. Obermeyer of Auburndale of the engagement of their daughter, Miss Ruth Christine Obermeyer, to Mr. Stephen Freeman, Jr., son of Mr. and Mrs. Stephen Freeman of Syracuse, Ind. Miss Obermeyer was graduated from Simmons College in 1927. . . ."

The following excerpts are from a letter written by Dave Harrison. He, as you remember, was at one time stem winder of the T. E. N. "Here of late I have been moving around all the while so I had better give a little account and bring myself up to scratch. The last time I saw you I was still selling advertising space for *Aviation*, the magazine, and doing some special sales promotion and organization work for them. I continued along those lines until the first of July when I joined the International Aircraft Corporation of Cincinnati, Ohio, in the capacity of assistant sales manager. . . . The middle of October I left International and started on some special selling for an advertising agency in Chicago. . . . I started to work for the Fairchild Airplane Manufacturing Company this morning. I am not sure of my title as yet, but think that it is going to be advertising manager. . . ."

"Last summer I traveled something over 3000 miles by airplane. Needless to say, I enjoyed myself and had a good time. I went as far west as Central Missouri and as far east as Washington, D. C. Two of the trips were for more than 400 miles and in each case we flew non-stop. In one instance we flew 430 miles in three hours and fifteen minutes. Our average speed was over 130 miles an hour, if I remember correctly. Nothing that even approached excitement or the unusual happened on any of the trips. However, we were up in a storm one day that blew down barns and houses on the ground under us.

"Until I returned to New York I do not believe that I saw a single fellow from the Institute. I was pretty well over the Middle West during the course of the summer, but familiar faces were a rare sight. I had dinner with Bean Lambert one evening last week and we later went to a theatre. Incidentally, Bean has a most unusual job and one that might warrant some special mention in *The Review*. He is to be connected in some way with the Industrial Museum that is to be erected in Chicago. You will have to get particulars from him, but he has a unique connection. His trip last summer to Europe had something to do

with the preparation for the position, if it might be called that. . . ."

Several days ago one of the officials of the Reliance Electric Company of Cleveland was in the office and he gave a very favorable and enthusiastic report of the activities of Ken Lord. Ken is now located in Birmingham, Ala., one of the Company's outposts. — A last minute post card written by Whitney Ashbridge from Madrid, Spain, reads as follows: "Just about to shove off for home by way of the Canary Islands and Cuba. After a most interesting six months' stay in Spain I find myself pretty nearly at home in the language, but will be glad to get back for a change."

And now you will be transferred to the studio of the Course Secretaries. They have important information to broadcast. — J. R. KILLIAN, JR., *Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

COURSE I

The last few months, as the members of Course I well realize, have witnessed a complete absence of notes in this column. The comments I have received for my neglect have been sufficiently sarcastic to stir me to action once more. Here's one from Joe Levis: "I've been reading your column in *The Review* which has been regularly omitted because of lack of space." And George Leness inserts a little remark in a recent letter to this effect: "I'd go on talking about myself, but I feel now when I write you that I am broadcasting before the whole Class of '26."

Although the subject of the Olympic Games has been submerged in the annual football discussions, we should like to revive it to direct a little attention to the work of Joe Levis. The newspapers carried a short article about the good job he did in the fencing contests, and we now have a copy of the report of the captain of the team. It shows that in the foil team matches Joe won seventeen out of twenty-four bouts, and in the individual foil he finished eleventh out of seventy-four competitors, going through to the finals. This was the first time in the history of the Olympic Games that an American fencer reached an individual final. After the games were over Joe made a brief tour through Europe and was back at work in New York after a total absence of two months.

Among the crowd of Gothamites, which has been somewhat depleted of late, we have recently heard directly or indirectly from Earl Wheeler, who is now working for G. Richard Davis Company on building construction; from Al Heyser who is residing somewhere down in Greenwich Village; from George Leness who is still with Harris, Forbes Company; and Bernie Rosser. There is quite a sizeable contingent of the 1926 Civils around Boston now, including Samaha, Wilder, Pickett, A. W. Peterson, G. R. Peterson, Constantine, Southworth, and Horne.

I have heard that Ogilvie, who has been in South America with the United

Fruit, is expected back in the U. S. A. shortly; in fact, will probably be here by the time these notes are published. According to our list of addresses, Bill Rivers is still with the Standard Oil Company at Calcutta, India. We wrote to him almost six months ago, but have as yet received no reply.

I suppose that no issue of *The Review* is complete without the monthly wail about the lack of news from classmates, but, considering our own derelictions of the past year, we pass over this subject in charitable silence. The next issue should see a more substantial effort on our part to fill the void occasioned by our neglect. — WILLIAM MEEHAN, *Secretary*, 98 Montebello Road, Jamaica Plain, Mass.

COURSE II

The only member of the Course I have seen is Bill Hinckley, who was encountered in the crowd after the Navy-Michigan game at Baltimore, but unfortunately I could not stop to chat very long. He reports that York is still largely inhabited and supported by Technology men, himself included. I also heard indirectly that Bob Nisbet is in line for works manager for the General Electric Company, so I take it that Schenectady is also receiving samples of Institute efficiency.

After a summer spent in the laboratories running cracking tests I'm out on some more patent litigation, this time in Washington, D. C., but expect to go back to Newark, N. J., for a month or so on an unfinished case there about the middle of January. I sure hope some of my classmates will come out of their retirement and look me up or write me there at the Robert Treat Hotel. My permanent address is still as below. — JOHN JACOBS, *Secretary*, 1037 South Kenilworth Avenue, Oak Park, Ill.

COURSE V

One-third of us has married in the space of two years after graduation. That is our certain record, and it may be increased by one if Kamedzawa has taken unto himself a wife. In order of occurrence they are: Van Blarcom, Fletcher, Baxter, Chase, Macdonald, and Bates. Der Chemikersekretär beat out George, the erstwhile instructor from Mercersburg, by just ten days. Which explains a lot about the delay in recording the last nuptials in the big book. Last week while sorting over the umpty-umpty box of papers we ran across the announcement: "Mr. and Mrs. William Harding Ellsworth announce the marriage of their daughter, Minnie Katherine, to Mr. George Warren Bates, Thursday, June 28, 1928, Cohasset, Mass." We feel sure there will be no dissent to an expression here of a wish for all happiness to Mr. and Mrs. Bates from all of us.

A canvass of the constituency is in progress at the present writing. It begun a month ago but the only return was from Johnny Searles, whose chief concern nowadays is how to squeeze a little research in among the routine. He seems to have succeeded to a degree, if

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400 references to well known and much cussed literature on one problem alone is any criterion.

Back in the days of the bachelor dinner, Stan Cheney was in New York with Bruce Humphreville en route to Edgewood. It was the first sign or sound I'd had of Stan since graduation, but I recognized him with ease. In fact, he had hardly changed at all, except his job. Stan is now associated with the United Fruit Company in Boston, and apparently likes it. — I. R. MACDONALD, *Secretary*, 2301 Cathedral Avenue, Washington, D. C.

COURSE VII

At last the impossible phenomenon has come to pass. I, as Course VII Secretary, have heard from one hundred per cent of my Course. One day in early October while I was one of many gathered people, some one stepped up to me and touched me on the shoulder. "Hello, Ned." I started, pivoted, looked once, then again to make sure of my senses, and sure enough, there stood George Cummings who, as far as I had been able to determine, was lost forever. Not only was he there in person, tall, smiling and erect as of old, but with him there was some one new to my acquaintance. I had heard of old that things out West moved rapidly, and yet I did not believe that that referred to people from sedate old Boston who might be out there on business. It must, however, for I was introduced to a very charming young lady, his wife.

Early in November I received a letter from him which included the following interesting information. Since leaving the Institute George has been shuttling between Lansing and Grand Rapids, Mich. At each station he has been amassing knowledge and experience which is steadily pushing him up the public health ladder. Later, after attaining a goal he has in view, we may possibly see something of him while he is working for his Doctor of Public Health degree. Until then the following quotation will have to suffice, "Please convey my sincerest wishes to the following of the Class of 1926: Bob Watson and the boss of his family, Bertha; Mary and her other half, Mully; Leonard Phelps, down in the wilds of West Virginia; and last but not least, to yourself. Also extend my regards to all of the Faculty at the Institute."

Phelps, too, is still alive, even though he be dodging the bullets of the moonshiners of the Virginian Hills. This inference is made when he states that the dairy inspector is always very careful to blow his horn way out in the "hollers" as he goes out to inspect the dairies, lest he be picked off as a revenue officer out looking for liquor. No place for an hyperesthetic individual, Phelps! Other than missing rifle fire, he is doing health work in the City of Bluefield, W. Va.

Now I have before me a letter from Mary and a picture as well. Let's look at the picture. It shows Mullie holding a big, fat, smiling, contented boy.

Focusing on object of interest I can easily see many of Mary's characteristics portrayed there. Not only are some of the facial expressions evidently hers, but one can also see the twinkle in his eye that isn't there without meaning. If it were only possible to insert that picture I would do it without a minute's delay. This not being the case, I must state that Mary claims one-half interest in owning the Course VII, Class of '26 baby. May I add that we have due cause to be proud of such an addition to our family. Harry Burrett Mulliken 2d is his title, and he resides at 623 South Division Street, Kellogg, Idaho. — E. M. HOLMES, *Secretary*, 22 Bates Road, Watertown, Mass.

'27 The file this month looks like the Thanksgiving Day turkey on Friday morning — not much there except the chassis — so after pawing over the bones, your Secretary will step aside in order to let you read what Lee Miller, Eddie Dunn, and George Houston have to say. First off is a letter that Hal Hibbard sent to O. B. Denison '11, who in turn passed it along to us. It was written on the letterhead of the Esplanada Hotel, São Paulo, Brazil. "... I have enjoyed meeting a number of old Technology men down here, and we have always had a good time talking about the old school. I've been down here for six and one-half months. Find life is different but darned interesting. Was in Buenos Aires for four months and also other parts of Argentina. Have been in this country for two months, mainly Rio de Janeiro, and will be here for another three or four. After that I expect to see a little more of the other countries on this continent. ... You've noticed those advertisements with a Goodyear tire surrounding the globe? Well, that's my company. As Tom Knowles would say, 'I'm not the President, just a cog.' " — It needs to be recorded also that this office has received visits from William Harold Reed and George Houston and that we talked with Dick Cheney over the telephone when he was on a recent visit to the front line trenches in Winchester. Red Earl was seen wandering around the Institute buildings, but, unfortunately for these notes, didn't accept our kind invitation to call around. Undoubtedly, he made the visit when we were out to lunch, an unforgiveable error. — Rumor hath it that after the first of the year, Ed True will be associated with the New York Office of the Hobart Manufacturing Company. We offer him the unsolicited information that most of the avenues run up and down, most of the streets run back and forth, and most of the inhabitants run around and around.

So far this year, most of the notes from this M. I. T. Graduate Class of 1927 have detailed the activities of a very small group of men. It's an outrage, and every able-bodied member of the Class should protest to the Secretary in no uncertain terms. All who feel like protesting must do so in writing at once, receiving in return for their effort the Secretary's very

best wishes for a happy New Year. — JOHN D. CRAWFORD, *General Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

COURSES I AND XI

Course XI, which also must be maintained in the limelight through my efforts, has quite a record to shoot at. Sixty-six and two-thirds per cent of the Course are married. Also the other thirty-three and one-third per cent are going through the preliminary states for marriage. Furthermore, thirty-three and one-third per cent have become daddies. In more definite terms, two out of three members are married and one is a father.

Al Hall, who hails from 1859 East 87th Street, Cleveland, Ohio, sends this information: "It was only October 18 that our Technology Club here in Cleveland had its first banquet of the fall season. Harold H. Burton, son of former-Dean Alfred E. Burton, was our speaker, and he gave us all the dope about the borough plan of government in regard to Cleveland especially. We had a pretty good turnout, Hank Steinbrenner and I being the only '27 men there. Frank Rinehart, as you doubtless know, is another one of the cohorts here, but about the only time I see him is when we are both out in the wide open spaces shooting golf (to be more precise I should have said hunting). Frank Schreiner '26 lives in this neck of the woods, too. Frank and I are still theorizing how to get the musical clubs out this way and we hope to be able to put the idea in practice before old age overtakes us. A short time ago I received a card from Mac MacKenzie announcing that he had graduated to the honorable order of the night-walkers' league, in that he is a real daddie now. Mac is setting a real pace for the rest of the classmates, but just give us time, there will be a day of reckoning yet. Have you heard from Umbie Umbenhauer? He was married soon after graduation, too. I am still trying to get my tentacles on the bottom rung of the ladder. So far all of my efforts, such as they are commercially, have been in the employ of George B. Gascoigne, consulting sanitary engineer. Supervision of the operation of sewage disposal plants and water purification plants together with numerous sanitary surveys make up the major part of my endeavors. There's design and construction ahead of me if I don't lack. I'll be glad to hear from any of the fellows, and in the meantime, I'll try to round up some of this Akron gang."

Lauritz Rasmussen, the happy warrior, gives a little of his life history since he escaped. "Upon graduation I started a temporary job with the United States Steel Corporation in Worcester, Mass. I did not go out there alone as four Technology men were hired, the other three being Slow Motion Darling, Sidney Blandford, and Bruce Sherrill. We lived together in Worcester until August when the job was completed and the quartet dispersed. Darling is the only one I have heard from since, and then he was on a survey with the Northern Pacific Railroad. I was with the Massachusetts

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Highway Commission until January, when I came to New York City with the Barney-Ahler Construction Corporation as concrete engineer. I stayed with them until the completion of their contract in July, after which I took a couple of weeks vacation and then returned to New York to secure employment with the Board of Transportation. I met Izzy Carp and Walter Johnson. The last I heard of Izzy he had a job in the Bronx. Johnson was with Dwight P. Robinson, but as they were to be shipped to Phillie, he was thinking seriously of resigning. By the way, I'm the only uncle of that three months-old baby boy of Mac MacKenzie. That is tough on the kid. George Fexy is now running two businesses besides working for the Board of Transportation. Fred Byron has visited the city three times, but only for very brief stays. He is apparently having one heck of a time there in Steelton and work is the least of it. Sanel and Jake Rabinovitz are also with the Board. Jake has been married a few months and is getting as fat as a pig." — LEROY G. MILLER, *Secretary*, 711 West Clinton Street, Elmira, N. Y.

COURSE V

Congratulations to Mr. and Mrs. Decker. Their daughter, Barbara Ann, had her first birthday last July. That is her $n-1$ birthday, where $n=1$. Notice of her arrival did not reach your scribe till lately. Congratulations are also in order for Mr. and Mrs. James K. Small who were married during the latter part of the summer in Saint Louis. Course V is stepping out. So far there have been four marriages, directly concerning thirty-three per cent of the group, and now one progeny has appeared. At least that is all I know about.

Bugbee has rated a magazine. In one of the fall issues of *Plastics* I perceived Bug pictured as a productive, hard-working chemist in the laboratory of the Diamond State Fibre Company. Dave Truax, who was working for the du Pont Company has gone west to Velva, N. D. A letter from him will tell how things are faring out there. — My old roommate, Fred Glantzberg, the opposite of me in some respects, has been graduated from Kelly Field and is now having an interesting time flying above Michigan and the surrounding scenery for the Ford Motor Company. — It is an odd coincidence that after having gone to college with Decker I should find my desk in Washington alongside of one of his cousins, a Miss Decker.

What does the New Year hold for us? A little real up-to-date news for this space via yours truly would make interesting reading. — EDWARD T. DUNN, *Secretary*, 710 19th Street, N. W., Washington, D. C.

COURSE XV

Goaded by the barbs of a too-much-restrained conscience, your Secretary has dusted off the summer's half-inch of dust from his trusty push-mill. The number of letters I have received from classmates in Course XV since last June certainly

speaks well for the business men. If they keep on coming in like this I'll be forced to one of two conclusions — either that Win Prescott's course in correspondence was a failure, or that busy business men don't write letters. Of course, I can't ask all of you to telephone me and tell me all about yourselves over the wire. That would be false economy and I don't know enough shorthand to take down even your names and addresses. I would like to request, however, that if there are any tired business men who need the solace of a sympathetic ear in which to pour their weary tale, or if there are any others like myself who feel the pangs of conscience, I would be greatly honored if I could be the means of conveying their contributions to the readers of this worthy publication. In other words, men, let's hear from you.

I have had several letters from Glenn Jackson who, as you will remember, was working with the Slater Company at Webster, Mass., doing time study and layout work. He has changed his connections, however, and is now with MacDonald Brothers, production and management engineers in Boston. How's that for sticking close to the old Course XV training? Glenn must have visions of fat consulting fees with which to feather his nest. It's all a matter of time, as we all are beginning to learn, and those that stick to the ship don't often sink. — Lloyd MacAdam surprised me the other day by a little personal visit. Mac is now located at Curtiss Field, Long Island. No, he isn't flying planes or even learning to fly. He's quite absorbed in ground work, so far, for he and Charlie Hurkamp, II, are both in the designing department of the Curtiss airplane factory. They say there's nothing quite so interesting and I'm inclined to agree with them.

Another newcomer in this neighborhood is W. A. Macquarrie. Mac put in three years with the '27 bunch, so I feel that he deserves a little mention here. He is living next door to Hurkamp and MacAdam at Hempstead, Long Island, and is working in the engineering department of the New York Bell Telephone Company. — Ned Anderson is still sticking close to the Institute. He is located in the Division of Industrial Cooperation and Research, so if any of you men are looking for better positions or for a change in location, Ned is there to say the good word for you.

I have here an interesting excerpt from a letter from Amund Enger to our esteemed friend, Mr.-Professor-Dean H. E. Lobdell. To quote: "Having left Germany on the first of June, I stayed in Norway two months, working in the factory of my father, whereupon I returned to France where I have been now for nine weeks. I have found that French is more difficult to learn than I expected and therefore I intend to stay in France for a year from this Christmas. At the present I am in Orleans, living with Count Raucourt who is a friend of one of my sisters, but I leave here for Paris before Christmas . . . partly because in the towns or provinces life is too still for me after four years in Boston. I am about as fed up with doing nothing as I possibly can be and I

am looking for a job in Paris. The job hunting, as you know, is usually a very ungrateful business. It goes through connections and my father has none to speak of in France. As for me, I am just as unmarried and unengaged as before." Here's hoping Count Enger finds the job he is looking for. Some of us will be able to sympathize with him on this job-hunting racket.

As for yours truly, I have quite a few changes to report since my last epistle in these columns. I left the Murphy Varnish Company last August and have since been associated with my father in the David Houston Corporation. Our work is mainly in industrial real estate so that I find quite a lot of use for my Course XV work. So far I have been chief office boy, but I find the work vastly interesting and there is a great deal of scope and opportunity in it. I'm learning to handle the advertising and publicity for the firm and have been putting in quite a little time on the files and other records. In addition to my regular business worries I have taken on a three-year law course at New Jersey Law School and hope to get a degree at the end of it and qualify for the Bar (most of us can do that without going to law school). It's pretty interesting, although it takes up all my spare time. I have classes every evening and lots of cases to study each night. They have five courses Freshman Year — contracts, pleading, crimes, personal property, and torts. I had a quiz in contracts last Monday and used old Ossie Hauserman's Ec61 notes to review the stuff. They weren't half bad either.

As a last word I'd like to repeat myself and ask you fellows to crash through with a few letters. Let me know where you are and what you're doing. You're not any busier than I am, so take a few minutes off and drop me a line. I'll send the dope on to The Review. — GEORGE C. HOUSTON, *Secretary*, 612 Prospect Street, Maplewood, N. J.

'28 Although your Class Secretary fully realizes that the entire class is sick with peripatetic fever, he desires to write news about the Class and not to throw bull in order to fill space. To write news is impossible unless you fellows assist by writing to your Course Secretaries, informing them what you are doing and where you are working. So far, the members of Course I are far in the lead in keeping in touch with each other. But what about the other courses? It is below the dignity of your Class Secretary to use surreptitious means to pry into the annals of each individual member of the Class in order to carry on his job properly, but he is desirous to get cooperation from the members of each course for their respective secretaries. Come on '28 and loosen up with the news. — GEORGE I. CHATFIELD, *General Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

COURSE I

Most of our news this month comes from Bob Cook. He is working for the

1928 Continued

Lago Petroleum Corporation with headquarters at Apartado 172, Maracaibo, Venezuela. He writes: "I imagine you are aware of the fact that I took the job offered by the Lago Petroleum Corporation, and I am not at all sorry. Life has been extremely interesting since I sailed from Providence on one of the company's oil tankers. I was stationed in the office at Maracaibo for a month, where I was engaged in estimating and designing all the types of structures that the company builds for its own needs out here. After a month I was transferred to the actual oil fields at Lagurillas and here I did everything from locating wells in the lake to laying out batter boards for houses. After a month at that camp I was again transferred, this time to La Salina Camp, where I have been ever since. All of these places have been interesting and the working experience valuable. My present job includes laying out grades and estimating. Chuck Topping is down here also, but at a different camp than mine. Of course I am rapidly learning the Spanish language, at least the way it is spoken around here. For a whole day I often speak nothing but Spanish, since I am out in the field with six or seven peons and it is necessary to instruct them. There are a couple of '26 men down here working for the same company, Batchelder and Costello. I am rooming with Costello. Including the chief engineer and the office engineer in Maracaibo, M. I. T. is represented by six men in the engineering staff of this company."

Going to the other end of the northern hemisphere, here is a part of a letter from Gagnon: "Bernier is doing well, working as an engineer for the Public Service Commission in Quebec City, Canada. He told me in a letter last week that his only regret is that he is not working on influence lines any longer. For my own part, I am freezing in the north of Quebec supervising the construction of a small hydro-electric plant. I am employed by Z. Langlais and Company of Quebec City." Gagnon by now is out of the freezing wilds and is located at 8 Collins Street, Apartment 1, Quebec City. — A letter from Weinberg to Josephs, appropriated by us, gives Hy's address as 521 West 111th Street, New York, and he says: "I forgot to tell you that I met Billie Beard in the subway about a month ago. He is doing some research work for somebody, a New York State department, I think. I recognized him from the rear and promptly proceeded to attack him. He proudly showed me an article of his on traffic at highway crossings, and so on, in some journal of political science. Bloke

Joyce has not been sighted by this look-out. I have an idea that he'll be found down around Washington Square, but perhaps I'm wrong. It's one of the cheapest and most convenient places in the burg for young bachelors to live, ahem." Hy wants to know what has become of Sam Weibel. So do we.

The other day George Mangurian showed us a card from Porter. Harold is doing field work for the Canadian branch of the Bell Telephone Company. His address is 5717 Sherbrooke Street, N. D. G., Montreal. We're still trying to find out the meaning of that N. D. G. — That's that. Once more, fellows, let us remind you to keep up the good news. Drop us a line when you get time. Don't forget that the other fellows want to know what you are doing just as much as you want to hear about them. — GEORGE P. PALO, *Secretary*, M. I. T. Dormitories, Cambridge, Mass.

COURSE XVI

Just a little dope on the youngest of the young, the first report of the first class of the newest course to graduate a class. Quite prominent, no? Just think, Ole Loui Miller is actually supposed to be working. Yes, sir, he is with the famed Curtiss Company, and is supposed to be doing something or other in the wind tunnel, though not what our own Professor Warner did for our Technology tunnel on its installation. Quoting Loui, "As for women, I don't need them. We are all in aviation and spend most of our time chasing it up." Now I wonder if it really is aviation he is so diligently chasing. And Ed Walton is there, too. How can that company keep doing business? Ed says he has been trying to show the chief of the structures section how utterly simple it is to close a stress diagram by simply connecting the last two points by straight lines, regardless of their slope. Judging from the last few stress analyses I have checked from Curtiss, Ed is some high-powered salesman of his ideas.

New York must be quite an attractive place for the boys, for John Leslie is around there, too. John is doing his special stuff for no less a personage than Tony Fokker himself. John seems to have been the most successful of the bunch in his special pursuit, for the boy is top notch as an office boy and personal representative. But he says they are doing lots down there with their Super-Universals and their Flos. From the opening of one of his letters, he is evidently learning very rapidly to speak Dutch or some other foreign language such as is spoken in and around New York. — Now I

wonder where Dick Buzby, of the talking saxophone, keeps himself. No word from Dick, but I heard through other channels that he was going to get married and then hunt a job. Seems to me he will already have one then. — And there's John Stack in the same boat. But I did hear that he is down at the National Advisory Council of Aeronautics in the variable density tunnel, maybe comparing a certain well-known density with that of air at various pressures. John seems to be a bit non-communicative, as there has been no answer to several letters so directed.

All bitters have their sweet for just think of the thrill I got when I received a letter with a sure enough crest on it. From royalty itself, none other than Duke (himself) von Schilling. Duke is in the experimental test laboratory of the Wright Aeronautical Corporation, and as he puts it himself, "playing nurse maid to a lot of pancake engines." Now that's an awful predicament for royalty. — The four flushers or something or others, Tooley, Tsongas, Blount and Bailey, are holding the Middle West in an iron hand. They ate, slept, lived, and worked together till none could stand the other, and then more or less separated. Blount and Bailey check such sorry stuff as Ed Walton sends in from Curtiss, which he has the nerve to call stress analysis, both of them being in the structure unit of the airplane branch at Wright Field. Tooley and Tsongas are in the development unit of the same organization, loading to utter uselessness the otherwise fairly decent airplanes sent in by some of the aforementioned. Blount is leaving us in December to go into the consulting game with Wehmiller '25 who is doing very well as a consulting aeronautical engineer with an office here in Dayton. I think the main reason for his leaving is that, out of the vast number of stenographers at the Field, the quality is too low. Wehmiller has a darned nice stenographer.

Though they are not of our own Class, it is interesting to know that Jim Shoemaker is with the Pratt and Whitney Company, and with him is our friend, McLain. Just where Ted Doherty, Wang, Webster, and the rest are, I can't say. Our friend, Captain Brower, now Major Brower, is head of the airplane branch here, and Lieutenant Gardiner is head of the aerodynamics unit under him. We had as guests the whole crew of Navy men whom you will remember were with us in Tut-Tut Haven's class on machine design. They spent a week looking us over out here. — JOHN P. BAILEY, *Secretary*, Airplane Branch, Wright Field, Dayton, Ohio.



Technology Club of Chicago

ON Tuesday evening, November 6, the Technology Club of Chicago held the first fall meeting with a dinner and smoker at the Electric Club. The primary object of the meeting was to get the latest election returns over a private wire installed by the Western Union to give the quickest and best service from the various battlefields of votes. During the progress of the dinner, Lonsdale Green '87 and Charles B. Page '99 kept the twenty loyal Technology Alumni who had turned out for the occasion informed of the latest election returns. The main dining room of the Electric Club had a new electric radio, but thinking that the Technology spirit would flow more freely in a private dining room, we dispensed with the service of a radio during the dinner hour. However, the events moved along very smoothly and the President, Maltby '22, with the Former-Secretary, Herbert W. Kochs '24, added color to the party by bringing with them two very charming young ladies who evidently have the interests of Technology at heart. After dinner we retired to the main dining room to listen to the election returns and to play bridge. The election seemed very lively up till nine o'clock, and the bridge players found it quite a nervous strain to keep track of the cards and ballots at the same time. We are looking forward to another smoker in the early part of December, and hope to have a larger and more enthusiastic turnout without a presidential election as competition.

The Technology Club of Chicago has recently suffered the loss of another of its prominent members, Frederick K. Copeland '76, who died recently at his New Hampshire summer home. Mr. Copeland was always very much interested in Technology affairs, both in connection with the Technology Club of Chicago and as a member of the Corporation from 1906 to 1910. His loyal Technology spirit and support will be greatly missed, especially by his many friends among the college Alumni. An account of his unusually active and distinguished career appeared in The Review for December, page 98.

It seems to the worthy Secretary of the Technology Club of Chicago as well as to a number of the other Chicago Alumni that an arrangement to secure services of some of the Technology professors, when they are traveling in the Chicago territory, as speakers at one of our noonday luncheons or smokers would greatly stimulate interest in Technology affairs by the Chicago Alumni. Nothing seems to arouse as much spirit and enthusiasm among the Alumni located quite a distance from Boston as a touch of local color from the old home town. The occa-

sional visit from one or more of the members of our Technology Faculty will go a long way towards stimulating more enthusiasm among the Chicago Alumni.—CHARLES J. WARD '15, *Secretary*, Concrete Engineering Company, 1124-1125 First National Bank Building, Chicago, Ill.

Niagara Falls Technology Club

The Niagara Falls Technology Club held their annual meeting at the Niagara Club on November 23. One-half of the membership was present. Flowers and a letter of sympathy were sent to Jacob Strader '96 who has been sick for several months. In the election of officers Arthur T. Hinckley '08 was elected President and John H. Rountree '25 of 653 Orchard Parkway, Niagara Falls, was elected Secretary-Treasurer.—ROBERT A. MONTGOMERY '19, *Secretary*, 946 Lafayette Avenue, Niagara Falls, N. Y.

Southwestern Association of M. I. T.

The Southwestern Association of M. I. T. met for lunch at the University Club, Kansas City, Mo., on November 14. Those present were P. E. Golsan '12, B. W. Crenshaw '24, E. Pomeroy, Jr. '23, H. E. Breitenbucher '28, G. W. Hall, Jr. '23, C. S. Timanus '18, J. E. Johnson '08, W. L. McPherrin '14, and the Secretary. Our Scholarship Committee, consisting of G. W. Hall, Chairman, Herman C. Henrici '06, and J. J. Falkenberg '19, is making preparations to select a candidate for the regional scholarship granted our association for the coming school year.—R. L. Falkenberg '19 announces the arrival of Robert Lawrence, Jr., on October 14.

Our Association will hold its monthly luncheon at the University Club, Kansas City, Mo., on the second Wednesday of each month instead of at the City Club as previously announced.—C. ELLSWORTH BROWN, *Secretary*, Interstate Building, Kansas City, Mo.

Technology Club of Cincinnati

Frank B. McKibben '94 was in our city Monday, November 26, to address a joint meeting of the Engineers Club and the Cincinnati Section of the A. S. C. E. His subject was "Welding Steel Bridges and Buildings." The next day being Tuesday, the day of the regular weekly luncheon of the Technology Club of Cincinnati at the Hotel Havlin, he was invited to be one of our company.—Henry M. Waite '90, chief engineer of the Cincinnati Union Terminal Company, after a trip abroad has returned to see several million dollars of additional work added to his \$75,000,000 project. Follow-

ing his recommendation, at the last election bonds were voted to build the new Western Hills Viaduct which was a solution of one of the city's intricate traffic problems. We are happy to note that several new Alumni have been added to Waite's large engineering force and have been with us at our Tuesday luncheons.

In preparation for higher things, E. H. Kruckemeyer '11 and C. R. Strong '11 have been selected by our city to prepare plans for Cincinnati's Municipal Airport. So other Technology architects: C. F. Cellarius '16, G. W. Drach '83 and son E. Drach '17, F. W. Garber '03, and C. B. Woodward '03, R. Tietig '98 and W. H. Lee '96—all are prominent in the design of our city schools and other large public buildings. But for real power in the city we have the chief engineer of the Columbia Engineering and Management Corporation, C. H. Spiehler '08. Among the city's intelligentsia, too, are professors at the University of Cincinnati: H. B. Luther '08, A. P. Mathews '92, and A. K. Laing '26.

Most of the men mentioned above are among those most frequently seen at our Tuesday luncheons at the Hotel Havlin, where and whence is scintillation, symposia, decorated menu cards, and sketchy tablecloths. Of such things is the aura that surrounds those choice spirits of this earth, men of Technology.—WILLIAM V. SCHMIEDEKE '12, *Secretary*, The Penker Construction Company, 1030 Summer Street, Cincinnati, Ohio.

The M. I. T. Club of Western Pennsylvania

The opening dinner of the winter season for the Technology Club of Western Pennsylvania took place November 6 at the University Club, Pittsburgh. The usual program of dinner and a speaker was supplemented by radio reception of the election returns. Forty-five attended. The speaker was A. E. Crockett, head of the instruction department of the Jones and Laughlin Steel Company. He told the story of how steel is made, from the mining of the ore in Minnesota to the drawing of the wire and the cooling of the coils at his company's mammoth Aliquippa plant at Woodlawn, Penna., and illustrated the talk with lantern slides. He was the speaker of the evening, substituting for Professor Robert E. Rogers of the Department of English at the Institute. He played his difficult rôle ably. Professor Rogers had sent word at a late hour that illness would prevent his being present. George Ousler '16, last year's Club President, opened the after-dinner speaking with a review of what the Club did and did not do last year, and introduced his successor, Francis J.

Chesterman '05. Chesterman announced that he had no intention of lionizing all the honor that was to accrue from the coming successful season, that he desired to share it with the other officers of the Club. Organization, he said, had been perfected for an equal division of glory. There was something, too, about an equal division of work, but your correspondent's notes are a bit confused at this point. The current officers besides Chesterman are: George E. Whitwell '15, Vice-President; Clarence B. Rogers '14, Secretary; Joshua C. Whetzel '17, Treasurer. Bradford Young '26 is chairman of the Committee on Programs and Meetings. Maurice R. Scharff '09, President of the Technology Clubs Associated, directed attention to the forthcoming meeting of the Clubs in Pittsburgh, and urged the cooperation of the individual members with Irving W. Wilson '11 who has accepted the chairmanship of the arrangements committee. He announced that "Technology in Aviation" would be the *motif* or theme of the meeting.

As the first innovation of a new season, the President broke out a pianist who could play the "Stein Song," "Solomon Levi," and lots of other things. Unable to recruit one from the membership, he adroitly borrowed for the season the leader of the musical clubs at Carnegie Tech. Edwin H. Schmitz '23, sometime Tech Show chorine, now a boiler stoker salesman, led the singing with gestures of approved Technology gusto. — CLARENCE B. ROGERS '14, *Secretary*, 1400 Severn Street, Pittsburgh, Penna.

The Technology Club of New York

Eight months have passed since the Technology Club of New York emerged from the obscurity of Gramercy Park and moved in among the big goings-on of the midtown district. Except for the regrettable circumstance that Nellie, the feline with the maternal instinct, continues to show no susceptibility to the uptown trend and even refuses to pay us a visit, things have gone well indeed.

The newly appointed Games Committee, whose chairman is none other than Dr. James C. Duff '86, Dean of Technology Club bridge players, moved into the front line trenches during October and November, and staged a great offensive in the form of the Annual Auction Bridge Tournament. For five consecutive Wednesday evenings the Battle of Little Big Slam was waged by thirty-odd players of varying skill and experience, some armed with only thirteen cards and a prayer, and the carnage was something fearful. Evening awards went to Harry B. Chalmers '00, Doc Duff, Duncan R. Linsley '22, R. J. Possiel '25, and G. H. Stark '27, but the white-haired boy of the tournament, the Alvin York of the whole fracas, was Possiel, who several years ago

earned undying fame by excusing himself from a Kelly Pool game to go to his own wedding. Poss took home the big sugar, but was only an instep ahead of Chalmers and Ralph H. Gilbert '19 who refused to concede defeat until their last ace was trumped. Viva Possiel, say we!

And now we've turned to Cowboy Pool. Jack Fruit '02, the Pool sub-chairman of the Games Committee, has selected this ancient Aztec sport for the current tournament, and the *crème de la crème* of Technology pool players are fighting it out on this line if it takes all summer. In order to avoid prolonging the tourney into the next Democratic administration, the players have been divided into four ranches of four cowboys each, and the ranch winners will eliminate among themselves for a cowboy champion. All styles of play are permitted, including body English, catch as catch can, and Australian crawl, and the winner will be invited to participate in the New Year's Day Tournament of Cabbages in Hoboken.

On November 2 the Club celebrated Hallowe'en with modified whoopee in the form of various contests originally devised by the Druids and practiced under the weird spell of Hallowmas. Besides the traditional Hog-Calling Contest, in which Jim Burbank '16 copped the bacon, there were many severe tests of mental and physical dexterity ranging from the Great Air Derby or Bean Race, to the Siamese Jousting Tourney. The highest consolidated and amalgamated score for the evening was made by Don Fife '24, who was rewarded with a beautiful, hand-embroidered head of cauliflower, autographed with the name of a truck farmer in Yaphank, Long Island. A good time was voted by all, and a large sum was realized for the Fund for Freezing Polar Bears.

On the evening of December 4, Dr. Clifford H. Pope, eminent herpetologist, delivered a most entertaining illustrated lecture on "A Chinese Expedition for the American Museum," and on December 17 Clarence R. Lamont '07 talked on "Two Methods of Making Colored Motion Pictures," a subject on which he has made extensive research and study and proved particularly well-informed. On January 7 James D. Burbank '16 will speak on "Special Problems in Building Construction," illustrating his story with pictures of unusual building achievements in the recent past. His talk will be followed by a standard film of moving pictures.

We regret to say that Sporty Spalding '89 apparently has left us for good. After a summer at Saddleback, Maine, he is now engaged in hanging moose heads in his home at East Dedham and in driving a new Cadillac which he is reported to be licensed to drive. Jim Barlow '05 is now city manager of Portland, Maine, in which capacity he deserves and has our

best wishes. Stuart Bradford '21 recently spent a week with us while on a vacation from Buenaventura, where he has been doing harbor work for the Colombian government and enjoying the native sports of malaria fighting and tarantula hunting. Jimmie Banash '06 of Chicago, World's Open Pitch Champion (self-styled), was with us for a few days recently while training to defend his title in the annual tournament at the Hotel Pennsylvania. We haven't seen him since the night of the big game, so we fear the worst.

Well, folks, they're racking up the balls now and we have to stop. We hope you all will drop in and see us when you get a chance. There is bridge every evening and we guarantee there will be no kibitzing. Hoping you are the same, we are yours, and so on. — GEORGE S. HOLDERNESS '22, *Secretary*, The Fraternities Club, 22 East 38th Street, New York, N. Y.

The Technology Club of Central Ohio

On November 15 we held our fall meeting at the University Club, ostensibly for the purpose of hearing Ralph O. Sweetser '92 talk on "Gas and Hot Air," but actually to steamroller all differential opposition and elect Bob Litehiser '19, President, together with a new secretary. Fortunately we have no treasurer in our organization and, indeed, if we had, that individual would be most unhappy because we have no funds. — What the meeting lacked in numbers was made up in spirit, and was further enhanced by the presence of some of our members' wives. Mr. Sweetser's talk was interesting, and altogether the meeting was most successful.

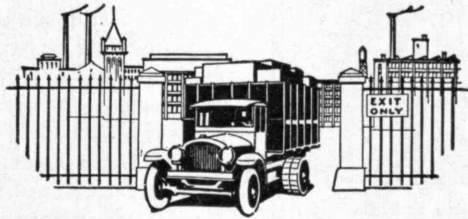
Our Club is planning far greater activity in the future, and at our next meeting we are going to try to bring every loyal Technology man in Central Ohio and help him live again, for a few hours at least, those happy days that we sing of so lustily in "Take Me Back to Tech." — EDWIN M. WOODWARD '17, *Secretary*, 1540 Mulford Road, Columbus, Ohio.

M. I. T. Association of Buffalo

The annual meeting and election of officers of the M. I. T. Association of Buffalo was held Tuesday evening at the Hotel Lenox, Buffalo, N. Y. Election of officers was held and the following officers elected: President, Eugene L. Klocke '19; Secretary-Treasurer, Malcolm C. Brock '17. An unusually large number attended and enjoyed a good old fashioned Technology night. Members present voted it the best ever, and have asked for a frequent recurrence of these meetings. The next one will probably be in January or February. — MALCOLM C. BROCK '17, *Secretary*, 123 Wingate Avenue, Buffalo, N. Y.

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HONORS STUDY IN ENGINEERING

(Continued from page 148)

selection. The opinions of various members of the staff with regard to the intellectual capacity, ambition, resourcefulness, sense of responsibility, and power for sustained effort of each candidate also are elements in the selection.

Within the scope and ideals of the curriculum the plan for Honors Groups provides greater independence of study to the students in the groups than is characteristic of the usual practice of the Institute and therefore includes:

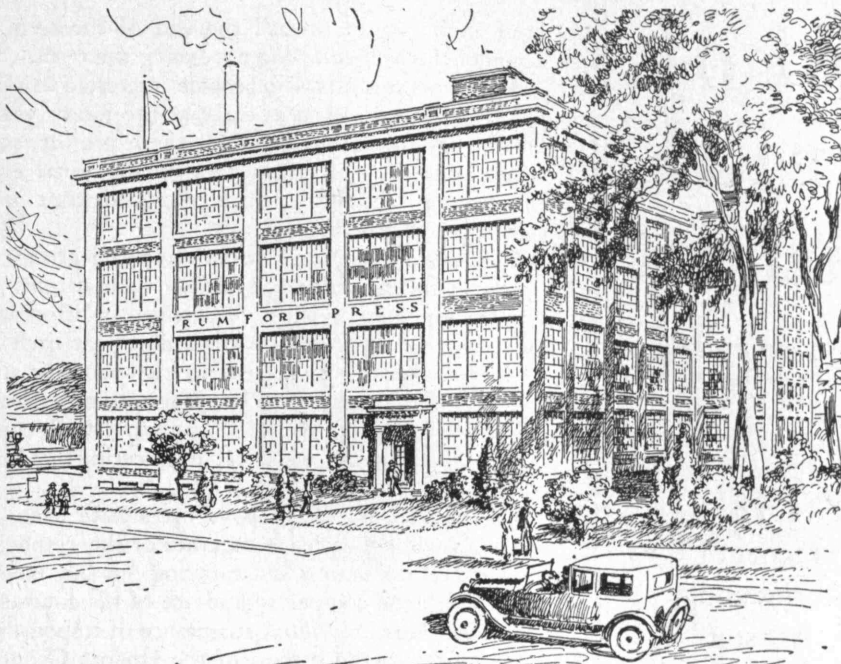
1. Certain freedom is allowed these students from existing restrictions of scheduled class hours and laboratory hours which affords opportunity for more reading and study related to the subjects of the curriculum. In order that the students' progress may be orderly and any difficulties encountered may be faced courageously and overcome, general counselors are available in the Electrical Engineering Department for conference from time to time, one for the students of each group, and a special conferee is available from the staff of each of the other departments in which students of the groups take subjects. Substitution of subjects in the curriculum is permitted to accommodate particular tastes and interests of individual students, provided that these substitutions do not carry the student too far afield. Such substitutions may be secured by approval of the Head of the Electrical Engineering Department. It is essential for the student to realize that in exercising his freedom he is expected to use his time in reasonable accord with the general policy.

2. The students in the groups are privileged to attend the class exercises of the regular subjects or not, as they individually please; but are expected to pass with distinction the usual term examinations.

3. Of practice problems assigned to the classes, the honors students are privileged to work out such number as they individually please, but each is encouraged to spend time over the details of only those that illustrate principles new to him, thus avoiding loss of time by any unnecessary repetition. All are expected to do the work in the regular weekly electrical engineering problem sections and to attend all previously announced written quizzes in all their subjects.

4. The laboratory work of each term which usually consists of a series of specific assignments, consists for each Honors Group in the electrical engineering laboratories of a general assignment relating to the principles of construction and the characteristics of the circuits, instruments, and machinery treated during the term, with the specific problems and method of work thereon largely determined by the interest of each individual student who carries on under the advice and direction of the general counselor. The students are encouraged to carry on all laboratory work as far as practicable as individual investigations of the principles and applications under consideration, directed along paths of their own interests in the subjects. The usual laboratory reports are omitted in the electrical engineering laboratories, and the report for each student consists of his notebook containing an outline of his plan for the term, the record of his various investigations and measurements, his comments, and a

(Concluded on page 184)



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HONORS STUDY IN ENGINEERING

(Continued from page 182)

brief summing up toward the end of the term of his accomplishments and progress during the term.

5. Honors students who become interested in a particular investigation, even as early as the junior year, that may be developed into a suitable thesis project, may substitute this for the larger part of the usual electrical engineering laboratory work provided that it is of sufficient scientific breadth.

6. For the purpose of stimulating the groups to the scholarly thoughtfulness regarding their careers that is needful for distinguished leadership in Electrical Engineering, near the end of this senior year each honors student is expected to present to his counselor and conferees an oral statement of his progress and accomplishments during the junior and senior years, with comments on his grasp of the electrical engineering field and its collaterals.

The features outlined above necessitate each honors student's whole-hearted acceptance of the responsibility of effectively planning and carrying out his method of study, with the counsel and advice of his counselor and conferees. This individual acceptance of responsibility is fundamental to the success of the Honors Group plan. Each honors student is his own taskmaster and must substitute his personal interest and discipline for the compulsion of the daily assignment. When entering an Honors Group each student is expected to understand that this lesson of self-administration is at once a difficult and a valuable lesson to learn. The members of the Department Staff always are ready sympathetically to extend suggestions and advice regarding the progress of study.

These regulations apply to the electrical engineering honors student in all subjects, except those taught to co-operative students at the works.

The experience indicates that in the junior year Honors Group there is apt to be, particularly during the first term, some decrease in the level of academic records for a portion of the group, with perhaps a few rather poor records. This probably is due to the period of readjustment to new conditions of work and to a few inappropriate selections. However, the men who have carried through to the senior year of honors study have attained remarkable records, with a few exceptions, and have shown evidence of very superior development.

Last June an oral comprehensive examination covering the field of electrical engineering and its collaterals was given to the senior honors students in order to obtain an indication of their general grasp upon their fields of study as a whole, in addition to the indication of their success in the individual subjects of the curriculum as shown by the term records. Attendance at this examination was voluntary, but all senior honors students except a few who had arranged to leave for their homes prior to the date of the examination and those on Course VI-A (cooperative course) works assignments were present. The results were quite satisfactory, and the opinion of most of the Faculty who have been in intimate relation to this work grows in favor of its serviceability for those electrical engineering students who are foremost in natural ambitions and resourcefulness.



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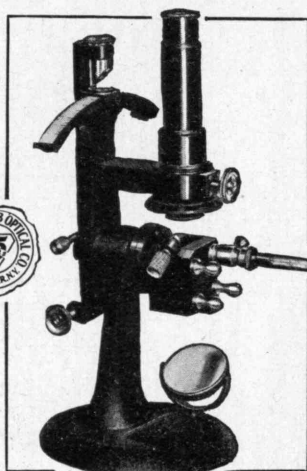
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BOOKS

Continued from page 158

great anatomist Vesalius having to obtain his cadavers clandestinely as recently as the sixteenth century. It is ironic, too, that when Western peoples did finally begin to absorb the learning of antiquity they clung most tenaciously to that which was untrue. It took years and lives to dislodge from their minds the false medical doctrines taught by Aristotle and Galen. But "Truth is the Daughter of Time," and medicine eventually profited thereby.

All of this pageant may be glimpsed in Dr. Singer's history, although he sticks pretty closely to the actual scientific development of medicine. In his preface he aligns himself with the vitalists, but in the actual text he does not allow his philosophical beliefs to color appreciably his presentation of facts. As Editor of the Oxford University Press "Studies in the History and Method of Science," and as the author of "Greek Biology and Greek Medicine," and "The Evolution of Biology," Dr. Singer has demonstrated that he is admirably equipped and that he writes out of a full knowledge of the history of science. In this instance the manner in which he relates medicine to the other sciences is illuminating and bespeaks the breadth of his conception.

The publishers were more lax than usual in proofing. The capitalization is capricious, on page 81, line 13, the word *language* is pied, and there are other minor errors.

J. R. K., JR.

Intimacies and Anecdotes

MEMORIES OF A SCULPTOR'S WIFE, by Mrs. Daniel Chester French. \$5.00. 284 pages. Boston: Houghton Mifflin Company.

OLD Concord, at a time when it was called "a place where the inhabitants support themselves by writing for the *Atlantic Monthly*," is the most successful portion in this book by Mrs. Daniel Chester French. She was fortunate enough to be a member of the group in the neighborhood that was headed by Ralph Waldo Emerson and Bronson Alcott. This was the group that started the school of thought called Transcendentalism, but Mrs. French was probably too young at that time to recognize it. She was too young, too, to have known Thoreau, but she recalls stories that she heard others tell of him. For the most part this section is filled with her brightest and wittiest anecdotes of the prominent people of Boston and its environs. Some of these are interesting to retell, and all of them make entertaining reading.

Mr. French (see page 155), a sculptor of international fame, is better portrayed as the student in Paris than as the older man who is still turning out such remarkable work. There is little to characterize him, however, and his personality must be largely inferred from the group of people that gathered around him. He attracted the great names of the last of the nineteenth and the first quarter of the twentieth centuries to him because of his interest in the arts and because of the simple friendliness

(Concluded on page 188)

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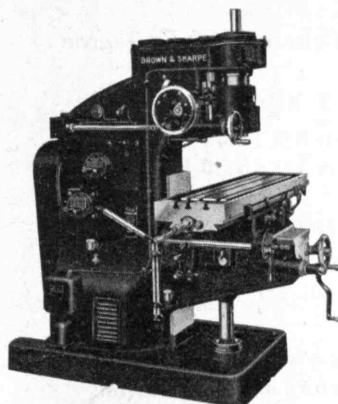
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Concluded from page 186

of his hospitality. The roster of these names is convincing: Madame Duse, Mark Twain, Cyrus Dallin, Robert Peary, Oscar Wilde, Saint-Gaudens, and Paul Manship are but a few of them. Mrs. French has collected a wide variety of stories about these people, some of them hearsay, and others drawn from her acquaintance with them. Of all these people, it seems as if Mrs. Frances Hodgson Burnett had had more attraction for Mrs. French than any other, which was probably due to the vogue of the Fauntleroy type she invented about that time.

Concord was not the only town Mrs. French knew. Her life began in Washington where she faintly remembered Andrew Jackson, General Custer, and the funeral of Abraham Lincoln. Quaint old Chester, New York with its social life, Paris, Chicago humming with the World's Fair, and quiet little Cornish, N. H., are peopled in turn with famous names. The French family finally settled down in Stockbridge in a pleasantly peaceful home called "Chesterwood." Here, too, new stories and new friends were added to her list. Mrs. French has the ability to relate these stories in a charming and sprightly manner, and her fund of them is practically inexhaustible.

It seems a little incredible that, with so many changes of scene and so many pages of intimacies with famous people, we are not permitted to find revealed the slightest impression of the writer's own character. Certainly it is a pity that the illustrations were not arranged with more regard for the chronology of events. Pictures of the statue of Lincoln in the Memorial at Washington, which is perhaps the best known work of Mr. French, are scattered through the book, even preceding the statue of the Minute Man at Concord, his first work, and a bas-relief of Margaret French at an early age posed as an angel was placed in with the account of her wedding in Sicily.

C. C. C.

Text Books

CONSTRUCTION OF ALIGNMENT CHARTS, by George W. Swett, '03. \$2.00. 89 pages. New York: *John Wiley and Sons, Inc.*

A textbook for students and a reference work for engineers which had its origin in the classroom notes used by Professor Swett at Technology.

ADULT LEARNING, by Edward L. Thorndike, Elsie O. Gregman, J. Warren Tilton, and Ella Woodyard. \$3.00. 335 pages. New York: *The Macmillan Company.*

A report of a research in adult psychology undertaken under the auspices of the Carnegie Corporation.

GEOLOGY OF PETROLEUM AND NATURAL GAS, by Ernest R. Lilley, Sc.D. \$6.00. 524 pages. New York: *D. Van Nostrand Company, Inc.*

A reference work and textbook.

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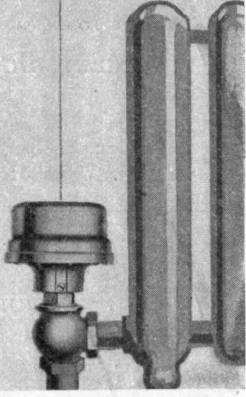
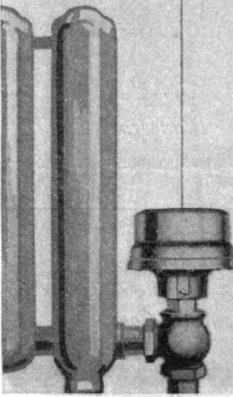
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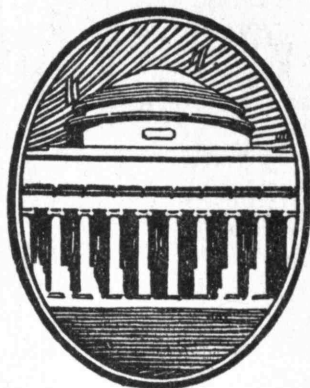
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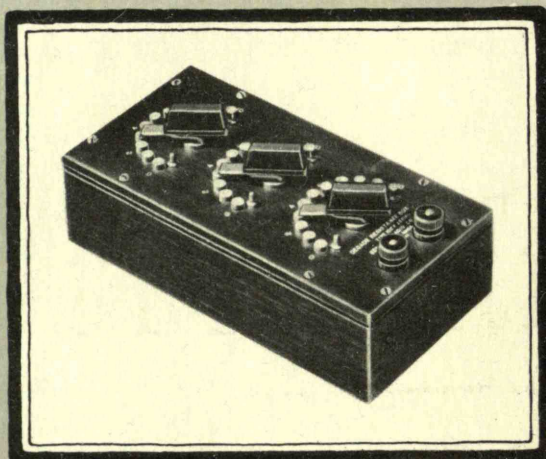
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